AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 44. No. 2.

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Published on the first day of each month by American Carpenter and Builder Co.; Wm. A. Radford, *President, Treasurer and Editor-in-Chief;* Wm. A. Radford, Jr., *Vice-President;* E. L. Hatfield, *Vice-President and General Manager;* Bernard L. Johnson, *Vice-President and Editor;* Roland D. Radford, *Secretary;* S. C. Kellenberger, *Dealer Service;* Charles G. Peker, *Eastern Editor;* Delbert W. Smith, E. B. Wolfrom, C. R. W. Edgecumbe, L. H. Reich, O. H. Sutter, Cecil W. Blashill, H. P. Sessions, J. J. Dubro, Dan E. Dunn, *Advertising Staff.*

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PROTECTION FOR OUR READERS—The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interest of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building products, machinery, equipment, supplies or tools.

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MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS

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Forecast of 1928 Construction By Classes

Prepared by American Builder Research Department

RESIDENTIAL BUILDINGS	Number	Cost
One-Family Dwellings	484,132	$2,420,660,200
Two-Family Dwellings	52,482	440,802,050
One and Two-Family Dwellings with Stores	7,387	80,775,420
Multi-Family Dwellings	18,263	1,019,438,800
Hotels	393	186,487,770
All Other Residential	377	50,312,877
Remodeling and Renewals	.....	428,926,639
Total Residential		$4,627,403,756

The value of residential work is 64 per cent of the grand total, in agreement with proportions shown by building permits.

PUBLIC, COMMERCIAL AND OTHER BUILDINGS	Number	Cost
Amusement Buildings	1,682	$ 235,878,242
Churches	2,071	116,057,726
Factories and Shops	8,470	312,864,826
Public Garages	8,077	141,392,006
Private Garages	342,762	135,814,092
Service Stations	7,415	26,646,250
Institutions	504	86,307,391
Office Buildings	2,975	456,597,810
Public Buildings	481	55,093,755
Schools and Libraries	2,342	403,350,934
Farm Buildings	138,856	56,070,204
Stores and Warehouses	27,318	376,460,827
All Other	.....	110,967,564
Remodeling and Renewals	.....	241,271,235
Grand Total		$7,382,176,618

Home Building is 64% of Total

RESIDENTIAL building is far and away the nation's chief building activity, measured either by square foot area or value in dollars. It is undoubtedly over 64 per cent of the total, as shown by the Department of Labor from their compilation of city building permits.

Each year, the building industry asks itself—"What of the coming year—what is the outlook?"

AMERICAN BUILDER is happy to report a flourishing and stable condition in the building industry. There has been no falling off in the industry as a whole. Any local declines have been more than made up in other directions. The country is gradually awakening to the fact that a seven billion dollar building year, under present conditions of prosperity in the United States, is normal—not a "peak," not a "boom"—but a healthy normal, to meet the present standards of the people of the United States.

Continued Prosperity in Sight

In spite of the general prosperity of the country, there is undoubtedly a somewhat "spotty" condition of business in different localities and different industries. The "Chicago Tribune" sums up the situation as follows:

"The fall business season has all the earmarks of being a good one and the third quarter of this year (1927) which will close on September 30th, has witnessed a number of favorable developments since mid-summer which give promise of quickening the tempo of commerce and of giving to it a stronger tone than it has had so far this year."

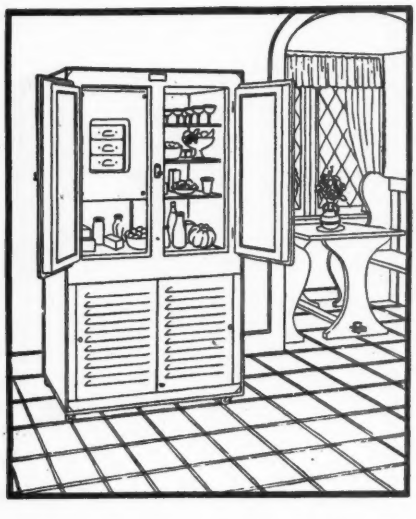
Reference is then made to the sales of such luxuries as automobiles. General Motors having sold during the year $680,619,000 worth of cars and earned a net profit of $129,000,000.

Reference is also made to a report by Chairman Meyer, of the Federal Farm Loan Board, to President Coolidge that farm receipts from all sources will be more than a billion dollars larger this year (1927) than last. This extra billion dollars in general circulation is sure to stimulate business in all lines. Comment is also made upon the fact that building activity is continuing without let-up.

It is apparent that the main "business indicators" point to continued prosperity and, in some respects, are a little better than at this time last year. With continued prosperity and plenty of money for building loans, the industry may look forward with considerable confidence to a normal year of continued building activity.

They'll choose the home that has Frigidaire

IT will pay you to advertise the houses you build as "Frigidaire-equipped." For it's the home with this automatic, care-free refrigeration that appeals most to buyers—it's the home they'll choose. And the same with rentals.



Advertise any hard-to-rent property as "Frigidaire-equipped" and down comes the "Vacant" sign. These are facts now recognized by leading builders everywhere.

Prospective residents prefer Frigidaire-equipped homes. They want complete freedom from outside ice supply. They want fresher, better-kept foods, ice and dessert-making service, elimination of costly spoilage. Frigidaire gives them these things, plus cleanliness, convenience, protection to health, and low operating cost.

From the builder's angle, Frigidaire is the best of investments. For besides paying big returns through easier and quicker property turnover, Frigidaire saves almost its cost. It eliminates the expense of a special refrigerator room or alcove.

Call at the nearest display room today. See the new Frigidaire for only $180 f. o. b. Dayton. Get the new low prices on other metal cabinet models and the liberal General Motors terms. Or write for complete information.

FRIGIDAIRE CORPORATION, Dept. R-112, DAYTON, OHIO
Subsidiary of General Motors Corporation

FRIGIDAIRE

PRODUCT OF GENERAL MOTORS

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

AMERICAN BUILDER

Formerly AMERICAN CARPENTER AND BUILDER

1827 Prairie Ave., Chicago—250 Park Ave., New York City

Help Dispel This Myth

"A MYTH laid off one million American workman last winter and kept out of circulation three-quarters of a billion dollars. Because of this myth one of the major ills of our economic system has flourished, unheeded by the public which pays the bills. The myth is that building activity must be governed by the thermometer."

The preceding paragraph is quoted from a pamphlet recently issued by the Portland Cement Association and vividly pictures a situation that is of vital importance to every person in any way concerned with the building industry, including every person who owns or uses buildings for any purpose. There has recently been an improvement in this condition of the winter slump in building, an encouraging trend. There still remains much to be done to level out the building curve. When the present peaks and degressions in building have been leveled the building industry will find itself in a greatly strengthened position and the effect on industry as a whole will be far-reaching.

✣

Forest Fires Decreased

ACCORDING to a recent statement from the National Lumber Manufacturers' Association, the fire season of 1927 which was already over in the Northern Pacific states and would soon be over in California, the North and East, has witnessed less forest fire damage than any previous season for some years. In five Pacific Coast states the fire damage and burned over acreage were the lowest in the history of organized protection in that region.

The extension of federal, state and private fire prevention and suppression organizations and the increasing care and caution of the public with respect to fire when in the forests are partly to be credited. Weather conditions, however, are entitled to a considerable credit, there being more rain than usual in the summer months on the Pacific Coast.

This improvement indicates the possibility of still further extending the fire prevention work and eliminating a large proportion of the fires, 72 per cent of which were in 1926, man caused. The direct damage caused by fire reported in 1926 amounted to approvimately $26,000,000 exclusive of damage to watersheds, stream flow, grass lands and recreational facilities, the money value of which cannot be estimated.

✣

1927 Maintains Building Level

SEPTEMBER construction contracts in 37 states amounted to $521,611,000, according to the F. W. Dodge Corporation. This amount was six per cent under August and seven per cent below the total for September of last year. New construction in these 37 states, during the first nine months of this year, has amounted to $4,796,482,100, compared with a total for the same period of last year of $4,840,779,800, showing a decline of less than one per cent. Contemplated new work to the amount of $627,291,700 was reported in September, representing an increase of one per cent over the same month of last year and a decrease of nine per cent from the August figure.

✣

Survey Lists Building Problems

A SURVEY of the major problems confronting retailers in 13 different lines of business was recently conducted by the A. W. Shaw Company, Chicago publishers. One of the lines studied was listed as Builders and Contractors and the information secured, by means of questionnaires sent to editors of outstanding trade journals and to secretaries of the national associations in the industry, is of interest. The following list shows the problems in the order of their importance as revealed by these questionnaires.

1. Poor estimating and cost accounting by contractors.
2. Failure of building public to recognize quality standards, including material and workmanship, to the same extent that it would, for example, in buying shoes.
3. Union labor restrictions.
4. Excessive financing charges.
5. Competitive bidding system which calls for hundreds of costly estimates for jobs never secured but which take the contractor's time and for which he can make no charge.
6. Reckless bonding of irresponsible contractors by surety companies.
7. Automatic credit established by lien laws.
8. Uncertainties in plans, specifications, contracts and supervision.
9. Marketing the finished home or other building.
10. Economic importance of construction to the business structure of the country as a whole.
11. Need for an accurate national construction barometer on volume and kinds of construction.

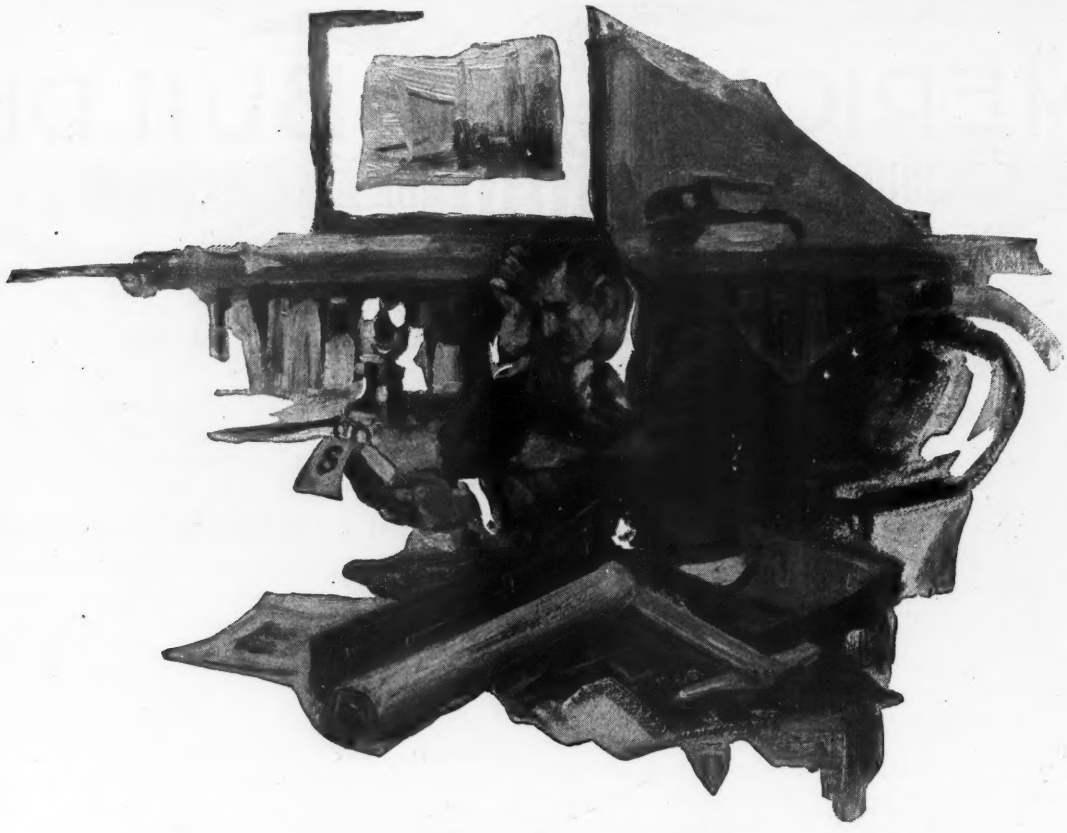
✣

What Does Rent Cost?

HERE is a tabulation which should be of real interest to the prospective home owner and an aid to the builder or contractor. Save this table and show it to the next prospect who is not sure whether he can afford to own a house. It will not take him long to see the point—he can not afford not to own a home. It is too expensive to pay rent.

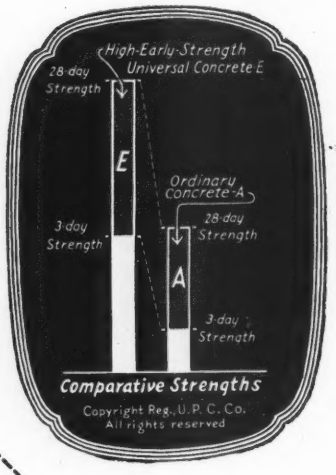
HOW RENT MONEY COUNTS UP AT 6% INTEREST

Rent Per Mo.	10 Yrs.	15 Yrs.	20 Yrs.
$ 8.00	$1,265.35	$ 2,234.48	$ 3,531.41
10.00	1,581.68	2,793.10	4,414.26
12.00	1,898.02	3,351.71	5,279.11
15.00	2,372.52	4,189.64	6,621.39
17.00	2,688.86	4,748.26	7,504.24
18.00	2,847.03	5,027.57	7,945.67
20.00	3,163.36	5,586.19	8,828.52
22.00	3,479.70	6,144.81	9,711.37
23.00	3,637.87	6,424.11	10,152.50
25.00	3,954.20	6,982.73	11,035.65
27.00	4,270.54	7,541.35	11,918.50
28.00	4,428.71	7,820.66	12,359.93
30.00	4,745.04	8,379.27	13,242.78
32.00	5,061.55	8,937.89	14,125.63
33.00	5,219.55	9,217.20	14,567.86
35.00	5,535.88	9,775.82	15,449.91
40.00	6,326.72	11,172.78	17,657.04
50.00	7,908.40	13,965.46	22,071.30



Pressed for Time?

Use *High-Early-Strength* Universal Concrete



Maybe the owner insists upon quick occupancy.

Maybe the improvement is of such public importance that delays are costly.

Maybe thru unavoidable conditions a scheduled completion date is hard to meet.

In any case you can crowd *weeks* into *days* in your concrete work thru the use of *High-Early-Strength* Universal Concrete.

High-Early-Strength Universal Concrete is made by using fully tested methods with the usual materials, usual labor, usual equipment, and standard—not special——Universal cement. And it not only is as strong at 3 *days* as ordinary concrete at 28 *days*, but as it also has a higher *ultimate* strength it is *permanently* better and *stronger* concrete. (See diagram.)

Such concrete may be made as workable as desired, and so is suitable for any kind of concrete work. Thousands of tests and hundreds of jobs of all types prove its practicability. For details send in the accompanying coupon.

Name.....

Address.....

UNIVERSAL PORTLAND CEMENT CO.
210 South La Salle Street, Chicago
Without obligation, please send me detailed information on methods of securing strong concrete in 3 days with the usual materials and equipment.
A B 11-27

Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York

Concrete for Permanence

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Everybody's Business

By FLOYD W. PARSONS

Air and Its Possibilities

THIS is the Age of Air. The development of air travel and radio and processes for getting an abundance of cheap oxygen, will not mark the end of the story. Out of the atmosphere will come still more wonders to amaze us.

Being creatures of land and water, it is not surprising we have given our chief attention to the earth and its oceans. Now we find we must either reckon with the air, or restrict our advances in the field of science.

Speed in transportation has become an element of greatest value. There are only three media through which we can travel, and many of the possibilities of two of these — earth and water — have already been exhausted. Fast trains on railroads operate on about the same schedules they did a quarter of a century ago. In fact, our fastest trains were faster years ago than they are now. Also through the water we seem to be approaching the limit of our speed accomplishments. Air travel still offers unlimited opportunities.

The Sand Blaster at Work. © Ewing Galloway.

It does not require any large exercise of our imagination to visualize an early era when the earth's oceans will be literally bridged with floating landing fields, repair and fueling stations for air machines, and adequate accommodations for travelers who would tarry on their way. Planes for travel over land will be cheap in price due to quantity production, and most of the hazards will be taken out of flying. As has always been true in the case of a radical departure in current customs, no one is now able to comprehend the full effects of such a revolution in life generally. The motor car entirely upset realty values and air travel will bring about another and even more extensive revision of land prices. Mountain tops will probably sell at a premium.

But there is another sort of recognition we must give to the great mass of gas that enshrouds the earth. The sun's radiations would be fatal to our bodies if there were no atmosphere to intercept and protect us from certain classes of destructive light waves. We would be without food to eat if the air did not make possible nature's most fundamental process which is the fixation of carbon by plant life in every part of the earth. We call this process photo-synthesis. What this really means is that green plants through utilizing sunlight in some strange way are able to consume for their sustenance and growth the small amount of carbon dioxide normally in air.

Although this puzzling accomplishment on the part of nature has baffled man in all of his attempts to duplicate the feat, we recognize that the possibilities for future experiments in this field are tremendous. The average plant utilizes only 1 per cent of the solar energy that falls on it. Supposing we should find a way to increase this efficiency even in a small way, the result in food production alone would be of unmeasured value. It was proved conclusively during the war that plant growth can be greatly accelerated and the final yield increased by adding carbon dioxide to the surrounding air. The results are more favorable when at the same time we also supply high temperatures and greater light intensity.

The final outcome of this line of research will be farming methods enabling us to produce cereals, vegetables and flowers in a fraction of the time now required for such plants to reach maturity. Recent experiments with combinations of daylight supplemented with high-intensity artificial light, providing 24-hour illumination, proved beyond doubt that under such conditions many plants can be grown from seed to maturity in a remarkably short time. Spring wheat has been brought to maturity in 35 days by using this method.

But not all varieties of plants will stand up under the strain of constant growth. When the tomato is put on a 24-hour schedule, it wilts and dies in about two weeks. Twelve hours of daylight with six hours of artificial light, making an 18-hour day, is as long a period of photo-synthesis as the tomato can stand. Lettuce will produce a large head in three weeks on an 18-hour schedule, but after this length of time it sends up a seed stalk. On a 12-hour growing day the lettuce produces no seed stalk at all. Red clover, like spring wheat, is able to withstand a 24-hour day, and in one instance a crop of clover was grown from seed to flower in 38 days. Such investigations are leading to great economic achievements in the production of foods and fuels.

Although man has been surrounded by air since life began, centuries passed before this common medium was utilized to any considerable extent in serving the industrial purposes of civilized peoples. It took us a thousand years to discover that air possesses compressibility which can be converted into useful force. About 60 years ago George Westinghouse sat in the coach of a railroad train brooding over the delay caused by a wreck ahead. It was then he first conceived the idea of using air to operate brakes to stop moving vehicles. Later he started experiments to prove the merits of his idea and in a few years the first air brake was completed.

A railroad superintendent offered Westinghouse the use of an accommodation train made up of a locomotive and four cars. The air brakes were attached, the train steamed out of the station, and in five minutes the new device had been subjected to an unexpected test. As the locomotive

emerged from a nearby tunnel, the engineer saw a horse and sleigh standing upon the track only a short distance ahead. The instantaneous application of the air brake brought the train to a sudden stop, a serious accident was prevented and the world had evidence of the wonderful work of a new mechanical marvel. Train control is now recognized as being as vital as tractive power, and air is the heart of the whole matter.

A few years after Westinghouse started work on his revolutionary device, a young mechanic named Ingersoll was riding in a horse car in New York. He was explaining to the man sitting beside him the details of an air device that could throw a line through a second-story window in case of fire. On an opposite seat sat a prominent contractor who was engaged in excavation work. After the mechanic had finished his story the contractor inquired of him: "Why don't you invent something worth while? For instance, why not design a rock drill? Such a machine would save hand labor."

Ingersoll replied that he could do it if he had $50 to make the model. The contractor handed him that amount of money, at the same time giving him his card and telling him to go ahead. The mechanic went back to the contractor for many times $50, but the machine was finally finished and put into practical use. Since then rock drills operated by air have been shipped to every corner of the earth.

New uses for air now run all the way from the harmless practice of painting the body of an automobile to the deadly act of propelling a high-explosive torpedo from the tube of a battleship. It is compressed air that enables us to salvage sunken vessels, build deep foundations under water, transport grain and other materials by means of pneumatic conveyors, and clean the fronts of buildings and even automobile pistons with blasts of sand or steel grit. Pneumatic tie-tampers save the railroads money and cotton is cheaper because of the vacuum picking machines. High-pressure air plays a part in the long-distance transmission of gas, and it is not only used to increase the flow of petroleum from wells, but to supply the force in great central telegraph offices that renders possible the transmission of 200,000 messages daily through 150 tubes.

Although the most abundant of all nature's elements, air still offers the inquisitive scientist unmeasured opportunities for investigative work. Oxygen is found in the air in a perfectly free state and yet we have not perfected a way to utilize this most common element on a large scale in concentrated form. Eventually cheap oxygen at a dollar a ton will revolutionize all of the metal industries as well as gas manufacture. Laboratory practices in chemistry and medicine will likewise be materially improved.

For years science has discussed the possibility of the development of a safe explosive; one that would reduce the hazards of industry, be unworkable in the hands of assassins, and yet would be abundant and low in cost. Liquid oxygen would seem to be the substance sought.

Also in the earth's great mass of atmosphere are a few nobles that can trace back their lineage to the beginning of creation. These lords of space form 1 per cent of the air we breathe and not one of them ever did a lick of work or served a useful purpose until a few years ago. The aristocrats referred to are the noble gases, argon, helium, neon, krypton and xenon, and these five stand farthest aloof of all the elements known to man. No one has ever succeeded in explaining or combining any of them and in the act of respiration they exert no effect whatever upon the human body.

Argon forms about ninety-four hundredths of one per cent of the air. Imagine the infinitesimal quantities in which the rest occur. Of neon there is one part in 55,000 by volume in the air; helium, one in 185,000; krypton, one in 20,000,000; and xenon, one in 170,000,000. If a person were existing on xenon alone, it would take him 2,100 years to get a normal breath.

Argon was discovered by Sir William Ramsay a third of a century ago, but it continued in its happy state of idleness until Irving Langmuir put it to work in electric light bulbs, where the lazy argon not only refuses to serve as a conductor of heat, but its density discourages the evaporation of the tungsten filament. Argon now saves humanity tens of millions of dollars annually in lighting.

One of these days we will see electric lights in the homes of the rich giving off a strange and beautiful orange-and-pink glow, and inquiry will disclose that the striking effect is due to the use of the rare gas neon in the lamps employed. Krypton and xenon are yet a long way from earning their keep, but it is probable that if it were not for the former gas there would be no aurora borealis to awe us with its weird beauty. Helium, which is the most buoyant as gases, and so inert that no bullet can explode it, is making possible the more practical use of dirigibles.

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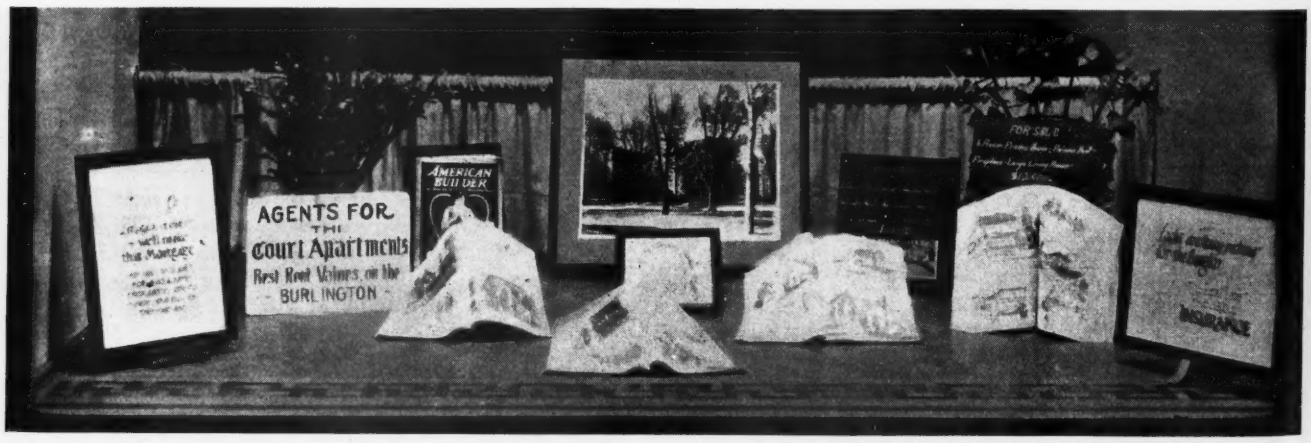
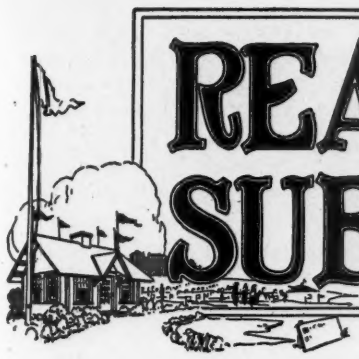
An Effective Window Display

CARROLL BRAGG REALTORS, INC., is one of the active firms in the development of building in the suburban districts of Chicago. The window display photograph reproduced here was sent to AMERICAN BUILDER by L. D. Dailey, sales manager of this company's La Grange office, with a letter which is, in part, quoted.

"In connection with our work we are making good use of your magazine, using it for advertising purposes on built-to-order jobs and as a window decoration. We have a great many inquiries for your plan books and in a number of cases have been asked if we sold the books. This naturally gives us a number of leads which we might not otherwise procure and our sales people lose no time in following up these leads."



Effective Window Display of American Builder Magazines and American Builder Designs in the La Grange, Ill., Office of Carroll Bragg Realtors, Inc.



REAL ESTATE AND SUBDIVISION WORK

Developing a Great Cooperative Apartment Project

By E. M. OREN

OUT on the north side of Chicago is the Indian Boundary Park, a 15 acre garden spot situated in the direct line of growth of that fast developing section of the city. Here a progressive firm of real estate developers, Gubbins, McDonnell and Blietz, have now under way an immense co-operative apartment project, with the park as its "front yard."

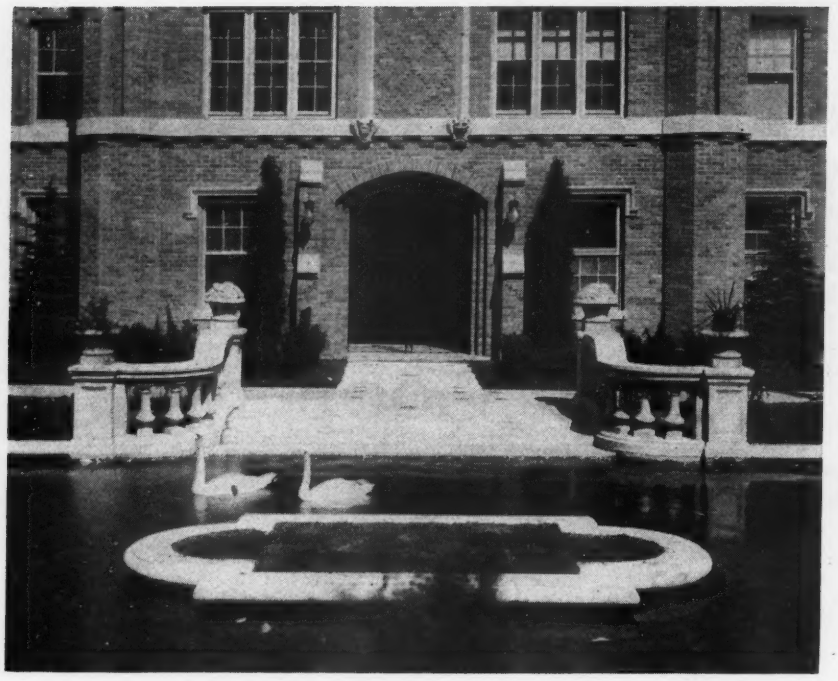
The park is located at Lunt Avenue, just west of Western Avenue and is owned and maintained by the State of Illinois, a permanent oasis within the limits of a great city. It already enjoys excellent transportation by motor bus, train and street car to the downtown business district, familiarly known as "The Loop."

Historically, this site marked the crossing of old Indian trails used by the explorer La Salle, and by the adventurers, soldiers and settlers who came after him. For a time the trail marked the line up to which white settlers, under treaty with the Indians, could build their homes. Pressure of white migration forced the Indians back and the trail became a memory. But a few years ago the Park Ridge Commissioners erected a monument marking the old boundary and created the park reservation.

The park is now beautifully landscaped with a crescent shaped lake in the center, a wading pool for children, flower beds, an occasional hummock crowned with shrubbery and a shelter house from the comfortably shaded porch of which mothers can keep a watchful eye on their children at play.

With keen foresight, some years ago, Gubbins, McDonnell and Blietz acquired the land on three sides of the park. The residence advantages inherent in the site thus acquired were easily apparent in consideration of the outward thrust of Chicago's population—at least they were easily apparent to Gubbins, McDonnell and Blietz. However, the very

Park Castles, a 66-Apartment Building in a Style Taken from the Medieval Castle Is One of the Three Buildings Already Completed in the Indian Boundary Park Project. James F. Denson, architect.



A Close-up View of the Main Entrance of the Park Castle Apartment Suggests the Beauty of Elaborate Detail with Which This Development Is Being Carried Out.

character of the land acquired implied something of an ideal as far as the character of the development was concerned.

Co-operative apartments ultimately were chosen, in view of the movement toward co-operative apartments in the large population centers of the United States. Many lessons were to be drawn from the co-operative apartment projects already completed in Chicago and in other cities, and from these lessons the firm profited to the utmost. For example, their study taught them that the 100 per cent co-operative—the project owned in its entirety by the purchasers of apartments—was by far the most sound.

This conclusion has been amply substantiated by their experience with the three buildings already completed on the east side of Indian Boundary Park. In the short time since these buildings have been finished, each as an independent corporation has earned and put out at interest a surplus that is practically guarantee that the co-operating owners will be free of extra assessments, and a virtual assurance that interest and operating charges will decline with the course of the years.

The first co-operative apartment building erected in the development was Park Manor, 36 apartments of four, five and six rooms, designed by James F. Denson, architect. Mr. Denson, by the way, designed the two other buildings completed by Gubbins, McDonnell and Blietz on the east side of Indian Boundary Park, and the building which now is under construction on the north of the park.

Before the first building was completed, Park Crest, an 18 apartment building to the south of it, was put under construction. The apartments were virtually sold out before either building was completed, and with this assurance of success the firm went ahead with the most ambitious item in the construction program undertaken to that time.

This was Park Castles, a 66 apartment building with an architectural style derived from the medieval castle, and containing details of convenience and comfort one is hardly likely to look for in any sort of a residence building project. For example, there is a 20 by 40 foot swimming pool in the basement, decorated after the Moorish style, with tile walls, a canvas-tented ceiling and a fountain. Showers and dressing rooms are provided.

There is a handball court, a gymnasium, an indoor putting green and a driving net. Living-room and reception-room walls are canvassed. Closets are electric lighted and in every apartment there is a radio plug leading to a separate antenna on the roof. These details are simply cited as evidence of the character of the whole. The quality of the construction will be made plain by a description of Park Gables, now being built on the north side of Indian Boundary Park.

Park Gables was designed by Mr. Denson, and takes its architectural style from the English manor houses of brick and half-timbering. It will contain 72 four, five and six-room apartments when completed, with the 24 apartments on the top floor having story-and-half living rooms. Walls are of rich brown brick, ornamented with stone, and colored stucco between the half-timbering of the gables. The building is in the shape of an "E," with the two courts each considerably wider than the average street. It is three stories high, with steel bearing partitions extending to the roof.

As with the three buildings already completed, there will be no street before Park Gables. Instead, the space will be so landscaped with lawns, shrubs and flowers that it will merge into the park proper, thus increasing the park area and eliminating from the windows vistas of parked motor cars and dusty streets. Tunnels at convenient intervals will lead from the front of the building to the street at the rear, from which tenants and their guests can leave and enter automobiles and where automobiles can be parked.

Now for a few details: Sound between floors in Park Gables will be deadened by the installation of hair-felt over the rough flooring. Sleepers to hold the finish flooring will be separated from the hair felt by pads, and nails clipping the pads to the sleepers will have padded heads. Third floor ceilings will be insulated with a wood fibre

A Swimming Pool Is One of the Features Provided for the Comfort and Pleasure of Park Castles Residents in Which Nothing Has Been Spared to Strengthen Its Appeal.

Park Manor, the First Building to Be Erected in the Indian Boundary Park Project, Contains 36 Apartments of Four, Five and Six Rooms. Like the other buildings so far erected it was designed by James F. Denson, architect.

material. There will be incinerators, vacuum heat, metal weather strips, copper screens, generous closet space—the closets electrically lighted—radio plugs to roof antennae, a Pompeian swimming pool, a handball court, one gymnasium for the exclusive use of women, a carpeted nine-hole putting course and separate rooms available for servants.

Lathing throughout is with an incombustible rock lath, manufactured from gypsum, over which three coat plaster work is being applied. Annoying sounds from pipes will be completely eliminated through the embedding of the pipes, as they pass through apartments behind walls, in a flaky, dry-fill gypsum insulating material. The same procedure is being followed in the kitchen, where the noise of water through the pipes will be muffled by the dry-fill gypsum.

For organization, management and ownership, the title of the building will be vested in the Boundary Park Gables Building Corporation. A restricted charter will limit the activities of the corporation to the ownership and operation of Park Gables for the benefit of the shareholders—the tenant-owners—and will prevent the use of any of the corporate funds in outside enterprises. Capital will consist of 5,712 shares of $100 par value. The corporation will purchase the building from the promoters for $1,146,200, subject to a mortgage of $575,000, the mortgage to mature in 1939 with a balance of $421,000 unpaid.

A man buying the least expensive four-room apartment, for example, will purchase 55 shares of stock, after which he will make a monthly payment of $51.15, which will include operating expenses, interest on mortgage and amortization of mortgage. From this beginning, shares entitling the purchaser to an apartment and a proportionate share in the entire project will graduate to the purchase of 125 shares, for a six-room apartment on which a total monthly payment of $116.25 will be made.

The Walls of All the Buildings in This Development Are Thoroughly Insulated as Shown Here by Pouring a Gypsum Insulating Material Between the Studs.

Park Castles, Park Crest and Park Manor are organized and managed identically as proposed for Park Gables with the success that already has been set forth.

With the completion of Park Gables there will be 192 apartments in the Gubbins, McDonnell and Blietz Indian Boundary Park Project. Large buildings already are planned, both to the west and east of Park Gables, facing south, and after these are successfully launched the development of the west side of the park will be taken up.

The outsider contemplating this project would suspect that one of the most difficult things in a development of this kind would be selling the apartments. Actually, the problem seems to resolve itself into one of the selection of purchasers. An investigation is made of each application for an apartment, which assures the best type of purchasers, both socially and financially.

Interesting Church Building Attracts Much Attention

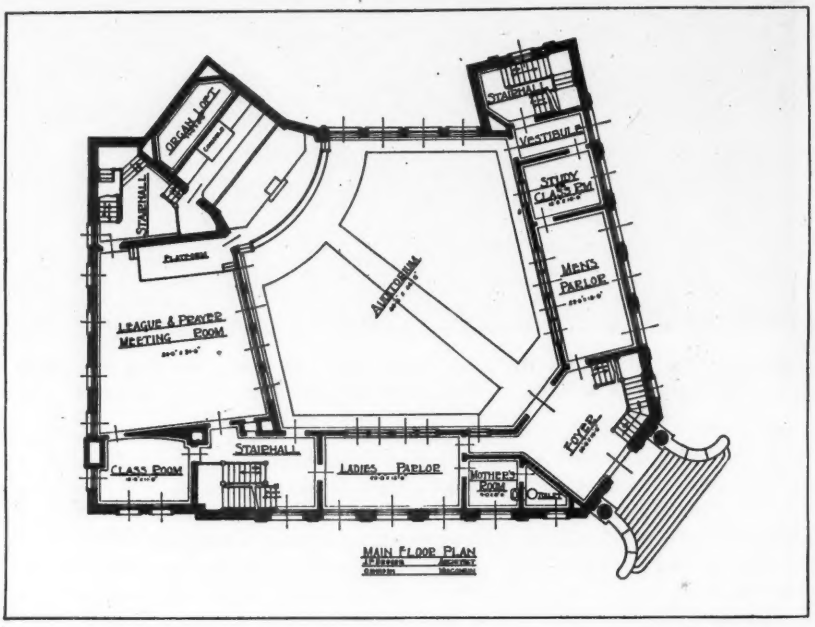
JULIUS DREGER, Architect

THE seventy-second anniversary of the First Evangelical Church of Oshkosh, Wisconsin, was celebrated by the dedication of a new church building of such interesting design that building committees from thirteen mid-western churches have paid it visits of inspection. This church is situated on a corner lot and this location has decidedly influenced its design. The unusual shape of the interior is said to have much of the suggestion of a theater.

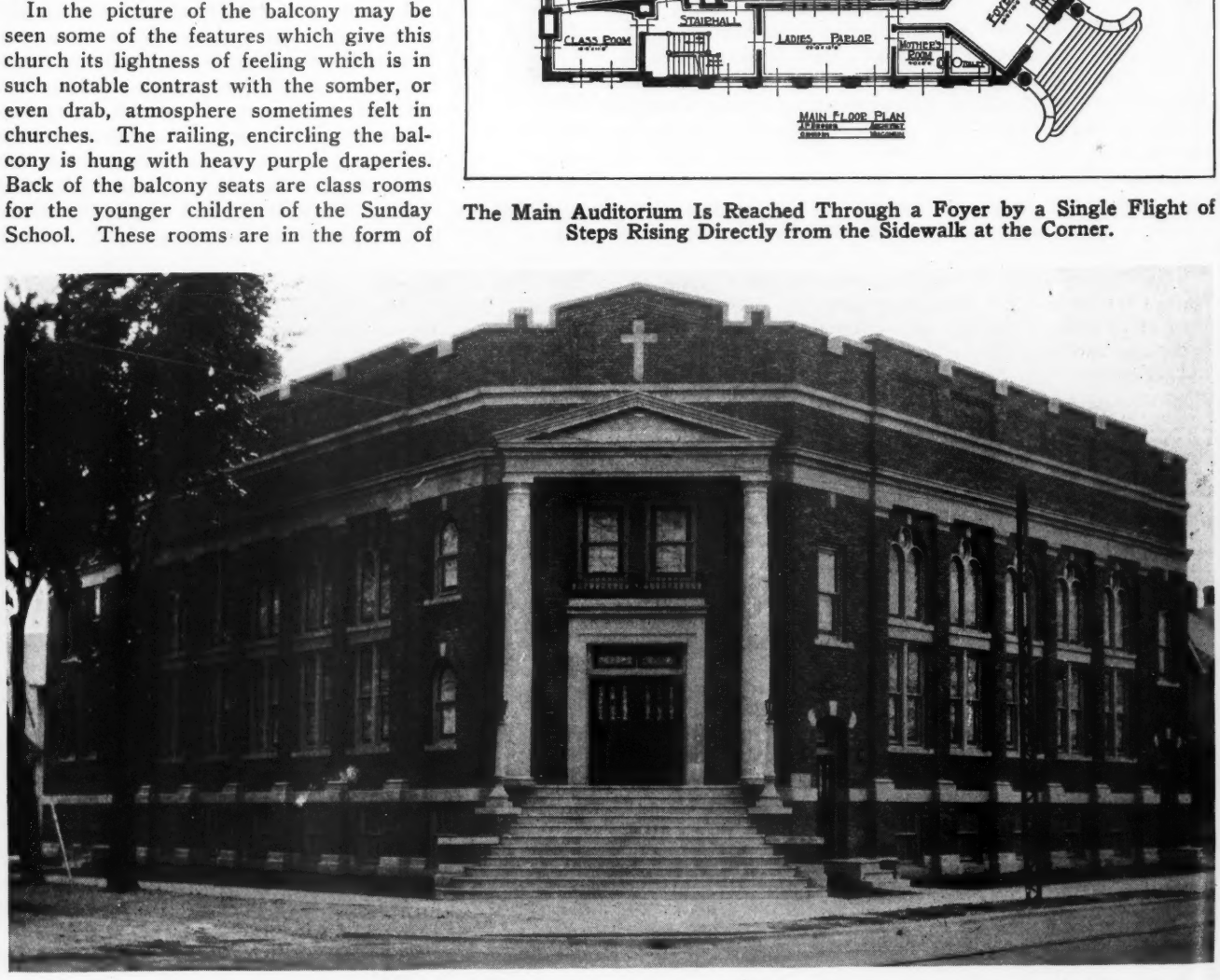
The building is constructed of gray-brown brick and is trimmed with artistic blocks of cast cement. The entrance is through a large portalled doorway of simple design placed at the street corner. The growing size of the church and space limitations of the location made it necessary to utilize every inch of space and the building is set close to the sidewalk lines on two sides with the entrance steps rising directly from the sidewalk. The whole problem of design has been well handled by the architect, Julius Dreger, of Oshkosh.

In the picture of the balcony may be seen some of the features which give this church its lightness of feeling which is in such notable contrast with the somber, or even drab, atmosphere sometimes felt in churches. The railing, encircling the balcony is hung with heavy purple draperies. Back of the balcony seats are class rooms for the younger children of the Sunday School. These rooms are in the form of alcoves, hung with heavy curtains which can be drawn to prevent outside disturbances from interferring with the class room work. The windows in these rooms, as well as in the rest of the church, are of classic design in a multitude of colors.

To the right, in the balcony picture, can be seen the echo



The Main Auditorium Is Reached Through a Foyer by a Single Flight of Steps Rising Directly from the Sidewalk at the Corner.



Building Committees from Thirteen Mid-Western Churches Have Paid Visits of Inspection to the New Building Designed by Julius Dreger, Architect, for the First Evangelical Church of Oshkosh, Wisconsin.

An Interesting Church Building

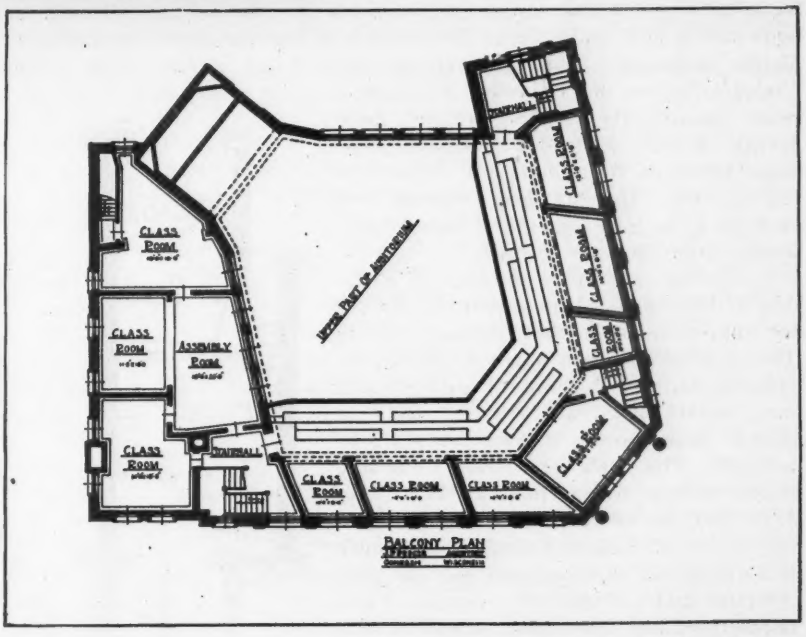
Looking Toward the Main Entrance from the Pulpit. The arrangement of class rooms around the balcony is clearly shown.

chamber where an auxiliary choir may be assembled to give echo effects in choir singing.

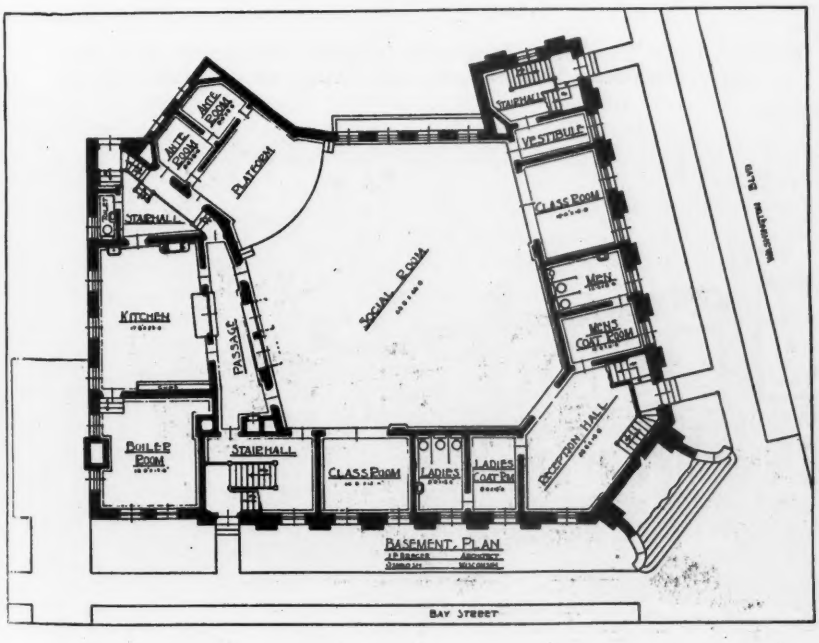
An unusual lighting effect was achieved by an original scheme which has been appropriately called rainbow lighting. It is seen, in the picture, in the splashes of light just above the balcony alcoves. These lights are varicolored and when used for the evening services they fill the church with a diffused and pleasing glow. A diamond shaped lighting system has also been installed in the ceiling, one corner of which is seen in the picture.

The plan of the auditorium floor was design with the idea of placing most of the rest rooms and offices on this floor in order that the basement floor might be used to the full extent as a recreational center. The front entrance opens directly into a foyer from which one may pass either into the church proper or into the ladies' or men's rest rooms or to a stairway leading to the balcony. Other units included on this floor are a church office, mothers' room, vestibules, league and prayer meeting rooms, a kindergarten room, chancel and choir room.

Directly at the rear of the pulpit are the choir seats and above them a large, ornamental grille for the organ. Besides the class rooms on the balcony, other class rooms are provided on the auditorium and basement floors. The large prayer meeting and league room is connected with the main auditorium by large glass windows which open, permitting a larger group to attend organ recitals and similar gatherings.



The Balcony Plan Shows the Sunday School Class Rooms Behind the Balcony Seats in the Form of Alcoves.



Most of the Basement Space Is Devoted to a Large Social Room with Provision for Kitchen, Coat Rooms and Heating Plant.

The social room which is the outstanding feature of the basement plan is of large proportions and will accommodate an unusually large group for all kinds of social activities. There is a stage at one end of the floor which is fitted up both for speaking and for the presentation of plays. At the entrance end of the floor there is a reception hall and at either side the coat rooms for men and women, toilets and class rooms. In the rear is a kitchen elaborately equipped for serving dinners of any size or kind, including cafeteria style of service.

A ventilating system is installed in the basement which is capable of effecting a complete change of air for the entire building once every three minutes and is so arranged as to flood the building with cool air in the summer time and warm air in winter. Two large boilers in one corner of the basement comprise the heating plant.

C. H. Edwards.

50,000 New Homes

The Development of the Northeast of Philadelphia

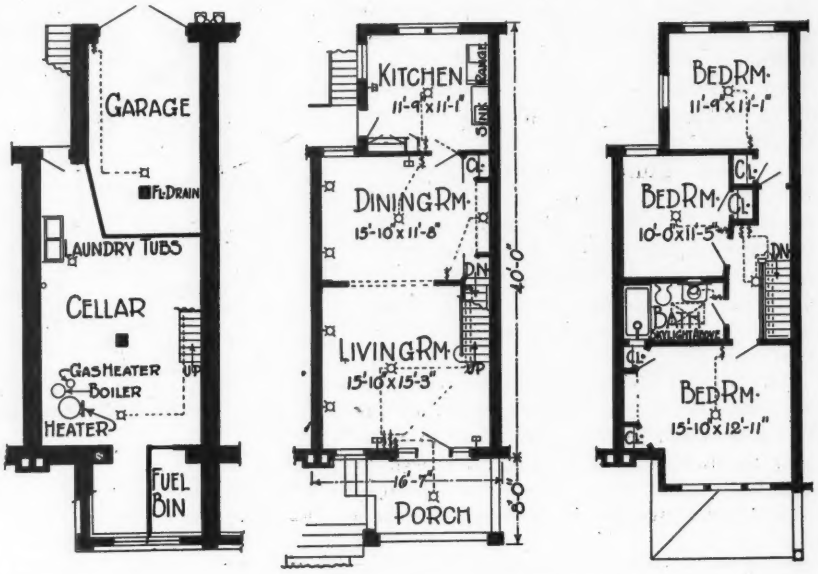
MORE than 25,000 new brick houses have been built in the northeast section of the city of Philadelphia since 1925. The value of this home construction is approximately $150,000,000. At the present time thousands of additional houses are being completed in this same district, and the plans call for the construction of at least another total of 25,000 houses to be built during the next two years.

The northeast section of Philadelphia comprises about 40 square miles. This area is bounded by Fifth Street, at the west; Allegheny Avenue, at the south; the County Line, at the north; and the Delaware River, at the east. Through this section extends the splendid Roosevelt Boulevard, or the Lincoln Highway (originally called the Northeast Boulevard). The east cartway of the Bensalem Branch of this boulevard is now under construction and will soon be completed. Roosevelt Boulevard extends from Broad Street, Philadelphia, to the Delaware River at a point opposite the city of Trenton, New Jersey. A free toll bridge spans the Delaware River at this point, and from here the Lincoln Highway goes through the state of New Jersey to the Hudson River, across from New York City.

In the last five years the city of Philadelphia has expended more than $40,000,000 for improvements in the northeast section. This money has been spent in street improvements, the opening of new streets, new water mains and sewers. At the present time the big developments are as follows: The Delaware River Collecting sewer, built in five sections at the cost of $5,000,000; the completion of the east cartway of the Bensalem Branch of Roosevelt Boulevard and improvements in Torresdale Avenue and Frankford Avenue. The northern end of Torresdale Avenue is constructed, above Bridge Street, with concrete paving and has just been opened to traffic. Many other new streets are in course of construction throughout the northeast side, the main ones being from 60 to 80 feet wide, from curb to curb. A number of these new streets have just been opened, while others will be completed in the near future. All these new streets have water mains, sewers and other modern city conveniences.

It is interesting to note that practically all the many thousands of new homes in Northeast Philadelphia are of the two-story type, the average new house having from six to nine rooms. This size home has proven most popular for the average family. The majority of these homes have private garages, usually built in the rear of the basement. It should be mentioned, however, that many three-story brick houses have also been built in this section, and that some of these have separate garages.

Good examples of the most popular types of houses constructed in this section are found in two recent operations of Smith, McGowan & Donnelly. One of these is on



Each of These Two-Story Houses is Provided with a Garage in the Basement, with Rear Entrance, and Six Rooms on the Floors Above.

A Row of Houses on Bridge Street, in the New Northeastern Section of Philadelphia, Which Is Typical of the Developments That Are Proving Popular in This Location. These houses were designed to sell at $7,975.

Another Typical Group of Row Houses on the New, Northeast Section of Philadelphia, Designed to sell at $6,750, so Financed as to Permit Small Monthly Payments.

Bridge Street, between Oxford Pike and Horrocks Street. This location is about a three blocks' walk from the Bridge Street station of the Frankford Elevated Street Railway, which extends to the main business district of Philadelphia and then connects with the Market Street Subway and elevated line running to West Philadelphia. Each one of these homes has six rooms and bath, sun parlor and basement garage. It has a terrace front and is of solid brick construction throughout.

The main features of this house are: parquetry hardwood floors throughout; all tile bath with built-in towel rack, soap compartment, tub with built-in shower, pedestal wash stand, steel medicine cabinet; attractive electric fixtures with plenty of outlets; joists 3 by 8 inches; wide stairways; woodwork all white pine; one-piece apron sink with swinging nozzle; large, well-proportioned rooms; cellar drained to sewer; 19-foot basement garage; all-enamel cabinet gas range; plenty of closets; sun parlor has hardwood floor, heating and electric fixtures, sunburst and casement window fixtures; terrace 20 feet wide.

This operation is built on a 70-foot street and has a 20-foot set-back, giving an open space between the rows of houses of 110 feet. The lot is 100 feet (for each house), and the house is 15 feet 9 inches wide by 41 feet deep. The purchase price for one of these homes is $7,975. The financing can be arranged in such a manner as to make the net monthly cost of buying this house $48.55.

Another typical group of houses is located on Horrocks Street, between Sanger Street and Cheltenham Avenue. This operation is built on a 60-foot street, from curb to curb. The location is about eight minutes' walk from the Bridge Street station of the Frankford Elevated Street Railway, and Horrocks Street is open to the Roosevelt Boulevard. The house has six large rooms, sun parlor, all-tile with built-in shower, a basement garage, and has all the same special features, as described, of the new Bridge Street homes, including solid brick construction throughout. The house is 15 feet 2 inches wide by 38 feet deep. The purchase price is $6,750, and the financing can be arranged to make the net monthly cost of buying $44.63.

The rapid development of the northeast section of Philadelphia has created a demand for additional trolley lines, busses and special transportation connections with both the Frankford Elevated Railway and the new Broad Street Subway, the latter being completed at a cost of $100,000,000. The Philadelphia Rapid Transit Company has just started the Erie Avenue trolley line which will serve as a feeder from the northeast to the Broad Street Subway. Two additional feeder lines to the new subway are now being planned, one running over Olney Avenue into the sections called Lawndale, Burholme, Crescentville and Fox Chase (all parts of the northeast), and the other running on Wyoming Avenue into the northeast of Frankford. The new Erie Avenue line will continue over Erie Avenue to Torresdale Avenue, and thence to Kensington Avenue, where it will connect with the Frankford Elevated. Later, it is planned to continue this line north over Torresdale Avenue to the districts known as Tacony, Holmesburg and Torresdale.

Since 1920 the assessed valuation of real estate in Northeast Philadelphia has increased more than 100 per cent. This section includes several great business sections, new banks, schools and new churches of all the leading denominations. It is a city within a city, and is one of the fastest growing communities in America. The complete story of its development would read like a romance. With the addition of 50,000 new homes in this territory, the city of Philadelphia will possess something like 500,000 houses. Thus, Philadelphia is running true to its famous title, "The City of Brick Homes."

ROBERT F. SALADE.

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More Efficient Refrigerators

THE American Engineering Standards Committee, upon request of the American Home Economics Association, is to call a representative conference of those concerned, to consider the desirability of establishing specifications and standards for household refrigerators which will insure their being well constructed and efficient, establishing, if necessary, a number of carefully defined grades.

According to the experts, 50 to 100 per cent more ice than necessary is being used in household refrigerators on account of the inefficiency of their construction, due to the fact that the consumer and the distributors who have supplied him have bought more and more on the basis of white enamel and nickel handles and other desirable but non-essential characteristics. As a result, good insulation and sound design, which are essential but concealed qualities, have long been slighted.

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"Grading Rules for Maple, Beech and Birch Flooring" is the title of a pamphlet issued by the Maple Flooring Manufacturers' Association, 332 S. Michigan Ave., Chicago, containing the rules adopted July 20, 1927, and effective September 1, 1927.

THE NEW BEATITUDES

Written Today for
The AMERICAN BUILDER
By R. LEE SHARPE

BLESSED BE: Laughing Men, Smiling Women, Boistrous Boys and Sweet-faced Girls, including Wee Sisters, Big Brothers, Young Grandmothers, and Nieces with Rosy Cheeks.....

BLESSED BE: Little Brown Houses with Red Roofs, Driveways Beneath Waving Treetops, Green Lawns with Flower-Bordered Paths, and Little Lights Gleaming from Rose-Colored Curtains.....

BLESSED BE: Bald-Headed Architects, Neat Blue Prints, Big Pockets, Paid-up Bills, Busy Workmen, Hand-on-the-Shoulder Friends, and Balmy Breezes Laden with the Scent of Old Rose Gardens.....

BLESSED BE: Tall Building Contractors, Bright Silk Dresses, Blue Overalls, Soft Collars, Blooming Apple Trees, and Building Material Dealers with Smiles in their Voices.....

BLESSED BE: Old Arm Chairs, Long-Stemmed Pipes, Colored Electric Lights, Swimming Pools of Blue Water, Hanging Lamps, and Craftsmen Who Never Grow Old.....

BLESSED BE: Old-Fashioned Flowers, Voices of Friends, Little Hometown Papers, Children Playing in the Twilight, the Smell of Steaming Coffee, and Dainty Girls Who Wash the Dishes.....

BLESSED BE: Pattering Rain Drops, Pink Parasols, Yellow Sunsets, Fly Swatters, Perfumed Letters, Buzzing Bees, Uncle Sam's Mail Carriers, and Magazine Advertising with White Space.....

BLESSED BE: Green Window Boxes with Purple Flowers, Big Garbage Cans, Dogs with Wagging Tails, Book Cases with Large Doors, and Little Packages tied with Red Strings.....

BLESSED BE: Warm Dinner Buckets, Silent Elevators, Big Iron Gates, Vine Clad Porches, Cream-Colored Curtains, Roses on the Garden Wall, and Breeze-Blown Fields of Golden Grain.....

BLESSED BE: Old Homes with Golden Memories, Large Windows, Garden Hoes, Old Magazines with Red Covers, Little Black Kittens with White Feet, and Sunken Gardens Bordered with Red Cedars.....

BLESSED BE: The Magic of Morning, the Splendor of Noonday, the Glamour of Evening, and the Wonder of Night-Time, and Men and Women who see God in the Waving Tree Tops, Nodding Flowers, and Along Quiet Country Lanes.....

UNTIL THE WORLD STANDS STILL—
UNTIL THE WORLD STANDS STILL.

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Pat. March 15, 1921, and Sept. 30, 1924.
ColorKeed Plan Patented April 19, 1927.

COLORKEED HOME PLANS

TRADE MARK
Registered in U. S. Patent Office.

"Smart Builders Choose Smart ColorKeeD Designs for Their Model or Demonstration Homes"

—Wm. A. Radford

THE smart home design is the thing today, just as in clothes or automobiles. It is the smart modish line which wins approval and makes quick sales.

Old fashioned ideas have gone into the discard and the commonplace, unattractive home design finds very little market with modern folks.

Homes do not have to be large to command attention; in fact, the tendency is distinctly in the other direction. It is the small home of five or six fairly good sized rooms, well constructed and equipped with all modern home keeping conveniences, that finds the largest demand.

Quality features must be built in and these do add to the cost; so that, as a general thing, the home of medium size costs as much as the very large dwellings of a generation ago. However, it is much cheaper and requires much less housekeeping labor to live in, to heat and to maintain these smaller, more efficient homes.

While good construction costs money (and is worth it) it has often been demonstrated that good architectural design costs no more. In fact, it may be actually less costly than the poorly designed but over-ornamented house.

Our ColorKeeD home designs are selected for their architectural charm and their practical, convenient arrangement. Architects and home builders are gaining inspiration from these designs and many merchant-builders and realtors are finding among these designs their best selling homes.

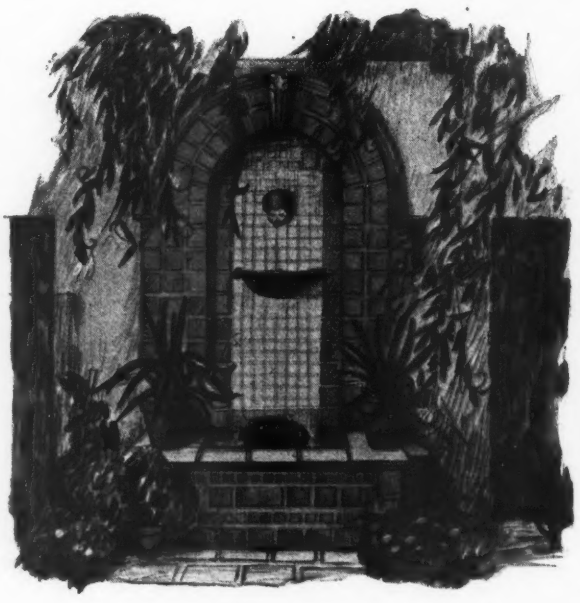
The MAPLECREST

Distinctive English Design with ColorKeeD Floor Plans on Page Opposite

THE specially designed home of larger size offers an opportunity for striking architectural treatment not usually possible in the smaller home that is built for sale.

"The Maplecrest" is an example of English motifs combined in a most happy way. Grey stucco with a flash of red brickwork and a red roof, dark green timbering in the style of Stratford-on-Avon, casement windows and green painted trim make of this a rare picture.

The broad side of the design faces the street, the effect of width being accented by the way the main roof is brought down over the covered driveway. The open terrace across the front is a pleasing feature which does not hide the details of the facade or darken the front rooms as was so often the case when large covered porches were the style.



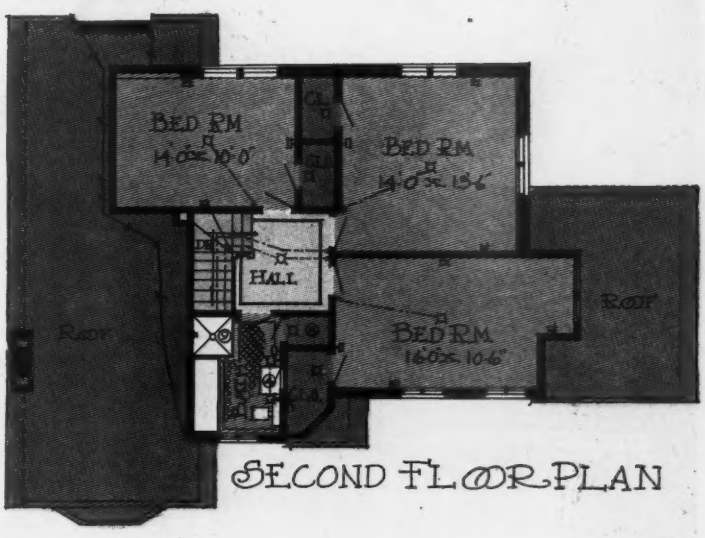
On the first floor in addition to the expected rooms there is a library and a maid's room with connecting bath. On the second floor are three large bedrooms.

The basement in this house is developed in a very interesting way with the heating plant and fuel room tucked away in a back corner, while the best part of the basement is developed as a billiard or play room; with a large open space remaining for the laundry. The fruit cellar is distant from the heating plant and is partitioned off with a masonry wall, assuring good cold storage.

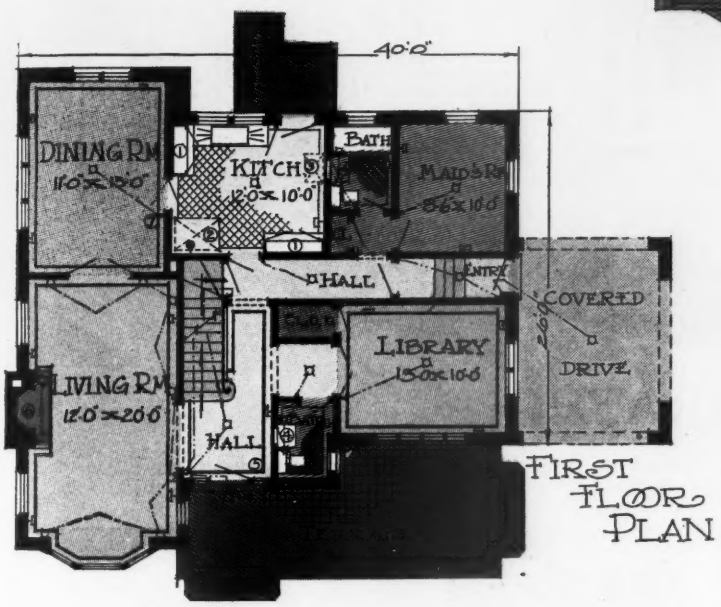
The basement equipment is very important in this and in all of the other ColorKeeD designs. This equipment is indicated by the small numbered circles on the plans and these numbers are explained in the "Key to Equipment" which follows.

Floor Plans of "*The* MAPLECREST"

Study these items and become thoroughly familiar with them so that in all of your home planning these approved items will be provided for. Some are built in when the house is put up, others can be added later; but the important thing is to provide for them on the plans so that when wanted there is a place for them.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Key to Equipment

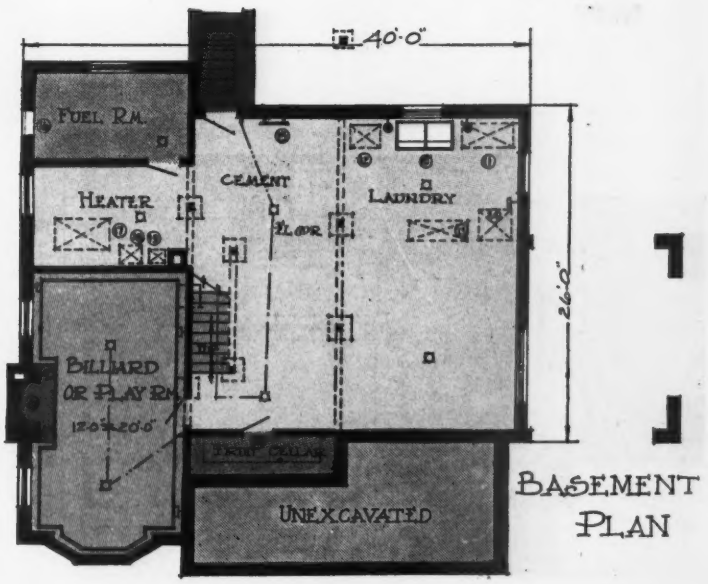
① Kitchen Cabinet
② Gas or Electric Range
③ Gas or Electric Refrigerator
④ Medicine Cabinet
⑤ Built-in Mail Box
⑥ Fireplace Throat and Damper
⑦ Thermostat
⑧ Linen Closet
⑨ Shower Cabinet
⑩ Laundry Tubs
⑪ Clothes Drier
⑫ Laundry Stove
⑬ Ironing Machine
⑭ Washing Machine
⑮ Electric Panel Board
⑯ Fuel Chute
⑰ Heating Plant
⑱ Automatic Water Heater
⑲ Water Softener
⑳ Fruit Cellar
Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Water Supply System
Radiant Gas Heaters
Casement Windows
Dishwashing Sink
Automatic Cellar Drainer
Oil Burner

KEY TO ELECTRICAL SYMBOLS

⊡ CEILING OUTLET ⊡ FLOOR RECEPTACLE
⊡ BRACKET OUTLET ▲ SPECIAL OUTLET
⊟ CONVENIENCE OUTLET ⊣ SWITCH

COLORKEED HOME PLANS
TRADE MARK

- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof
- Basement
- Fruit Cellar
- Fuel Room
- Stairs



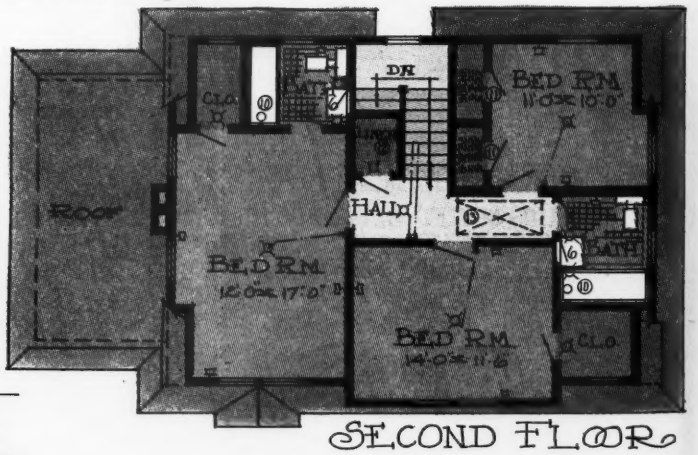
BASEMENT PLAN

The MARATHON

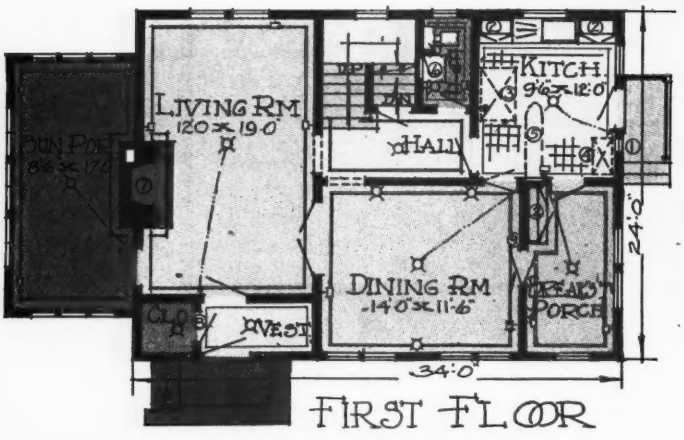
HERE is a pretty little Colonial home 24 x 34 feet, containing seven rooms, two baths and lavatory. The big sun porch at the front and the breakfast porch opening both from the kitchen and the dining room are special features of this design.

COLORKEED HOME PLANS
TRADE MARK

- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof



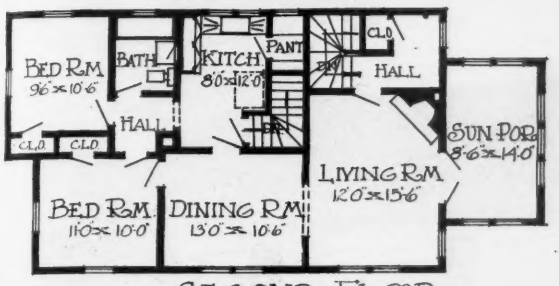
SECOND FLOOR



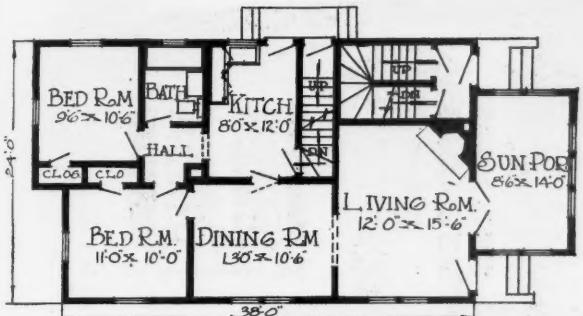
FIRST FLOOR

Key to Equipment

① Ventilating Fan
② Kitchen Cabinets
③ Range
④ Refrigerator
⑤ Ironing Board
⑥ Medicine Case
⑦ Fireplace Throat and Damper
⑧ Moth Proof Closet
⑨ Thermostat
⑩ Tub Shower
⑪ Efficiency Wardrobes
⑫ Linen Closet
⑬ Disappearing Stairs
Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute
Heating Plant
Oil Burner
Water Supply System
Hot Water Supply
Water Softener
Radiant Gas Heaters
Casement Windows
Dishwashing Sink
Automatic Cellar Drainer



SECOND FLOOR



FIRST FLOOR

The corner fireplace in each of the living rooms is a well liked feature.

The MARLIN

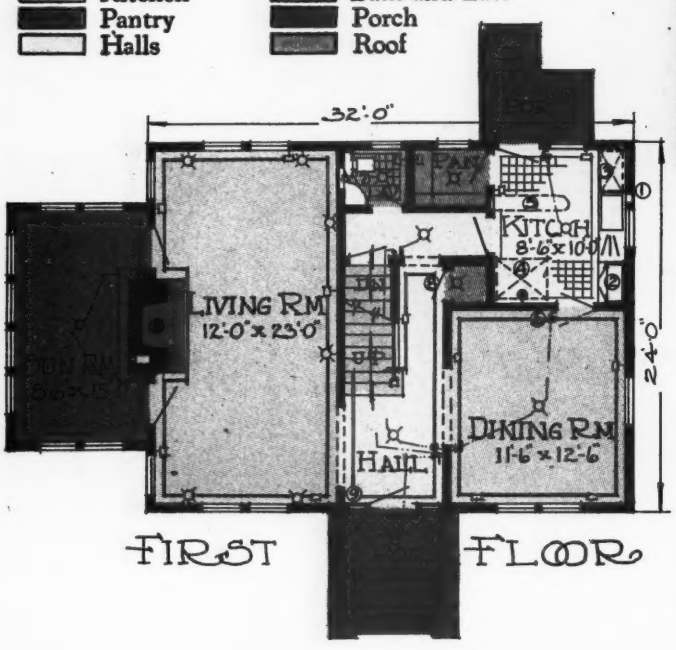
A TWO-FAMILY house, five rooms, sun parlor and bath on each floor and with entrances separated, one for each apartment. This is a very practical narrow lot design, measuring only 24 feet in width. Wood panelling in the front entrance breaks up the stucco and produces an attractive design.

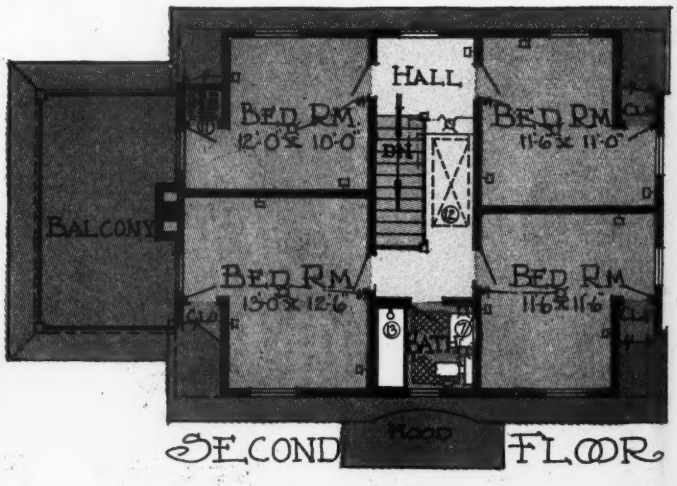
The MARSTON

AN eight-room Dutch Colonial design measuring 24 x 32 feet, perfect in its details. Lampland Lumber Company, Architects.

COLORKEED HOME PLANS
TRADE MARK

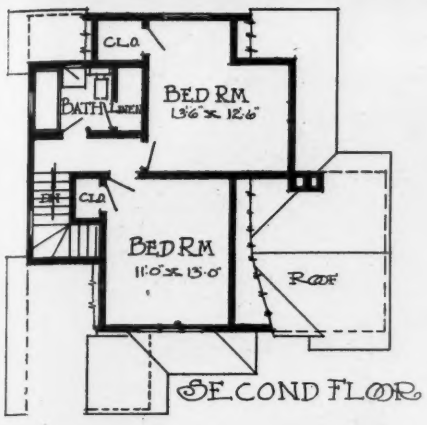
- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof

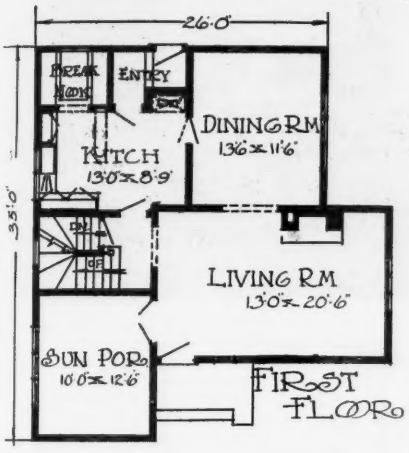


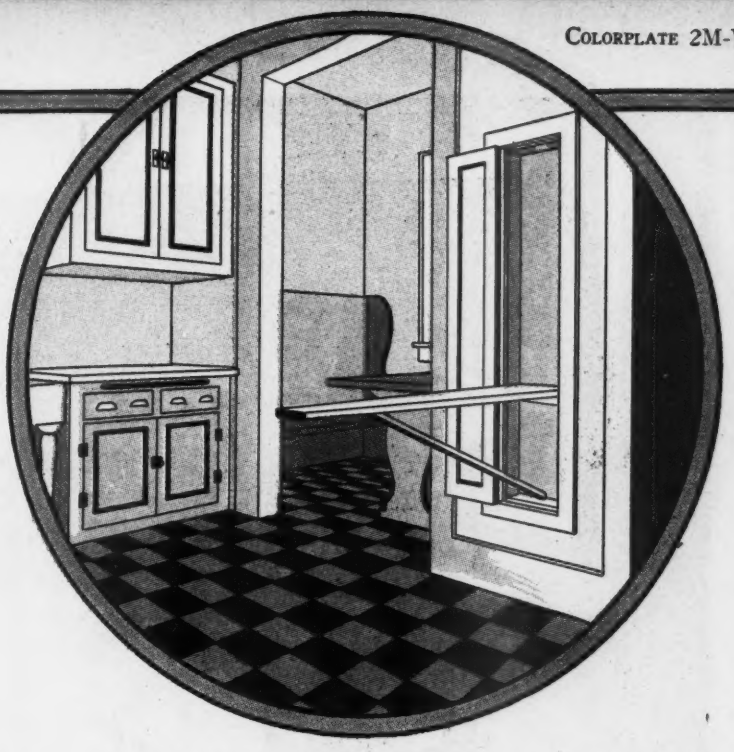


Key to Equipment

① Kitchen Ventilating Fan
② Kitchen Cabinet
③ Refrigerator
④ Gas or Electric Range
⑤ Ironing Board
⑥ Thermostat
⑦ Medicine Case
⑧ Mirror Door
⑨ Built-in Mail Box
⑩ Fireplace Throat and Damper
⑪ Efficiency Wardrobe
⑫ Disappearing Stairs
⑬ Tub Shower
Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute
Heating Plant
Oil Burner
Water Supply System
Hot Water Supply
Water Softener
Radiant Gas Heaters
Casement Windows
Dishwashing Sink
Automatic Cellar Drainer

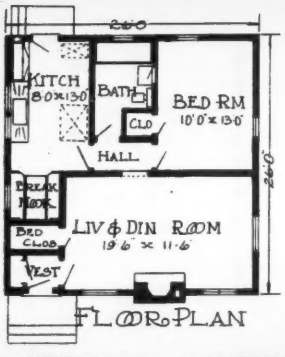






The MARTINDALE

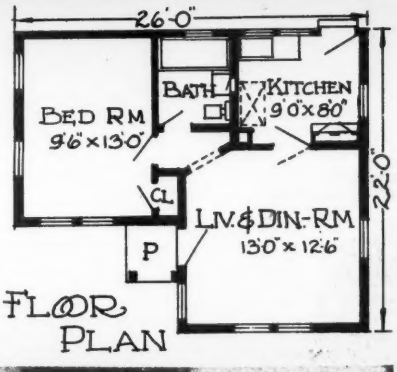
HERE is a quaint English design in stucco featuring large casement windows in groups. The arrangement inside is unusual and very interesting. The sun porch opens out of the living room but is practically a separate room. The stair hall is cleverly shielded and the dining room, kitchen, breakfast nook group at the back is compactly arranged. Upstairs are two large bedrooms and bath. The color sketch above shows a corner of the kitchen with its step saving conveniences.



FLOOR PLAN

The MASCOT

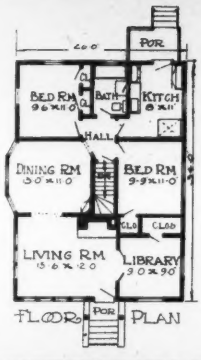
ABOVE and to the left is a charming little three-room doll house 26 feet square. Three rooms with five-room efficiency.



FLOOR PLAN

The MAYWOOD

BELOW and to the right is a small house gem in the form of an L. Three rooms and bath are provided.

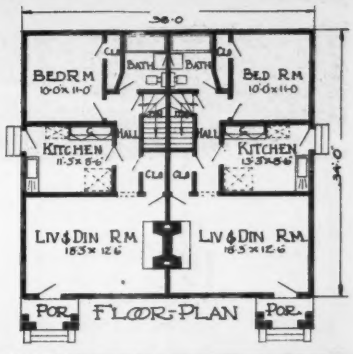


The MEDINA

ABOVE and to the left is a six-room stucco house 26x34 feet. This is a lot of house at small cost.

The MEMPHIS

BELOW and to the right is a double bungalow with three rooms and bath on each side. The exterior makes a charming appearance.



The MERRILL

LARGER units in masonry are coming into use with the growing popularity of building tile of vitrified rough texture surface and of concrete units attractively colored with a facing impervious to the weather. This design makes use of this newer type building material and scores a success from the double count of good looks and economy.

The design itself is very simple with a high ceiling living room in the front wing while the two-story part measuring 22 x 28 feet contains dining room, kitchen, breakfast nook and downstairs bedroom while upstairs are two large bedrooms and bath.

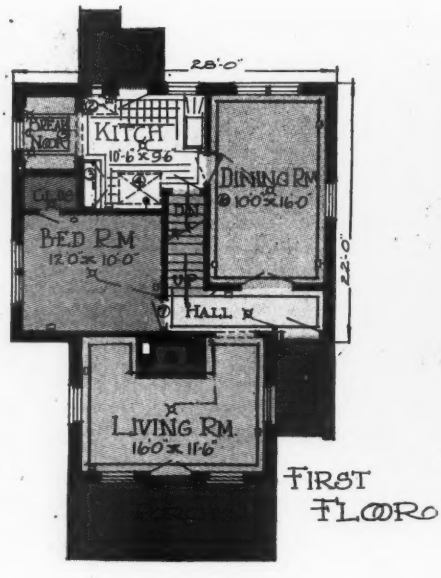
The bright attractive color scheme is secured by the green shingles contrasting with the yellow red of the masonry units.

COLORKEED HOME PLANS
TRADE MARK

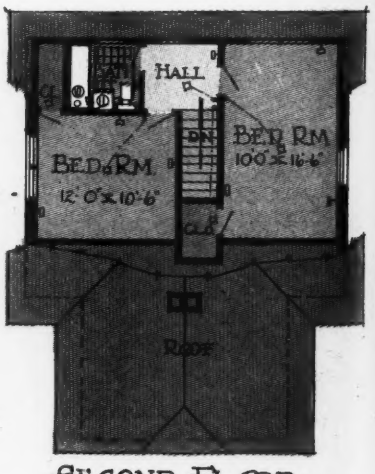
Living Room	Closet
Dining Room	Bed Room
Kitchen	Bath and Lav.
Pantry	Porch
Halls	Roof

Key to Equipment

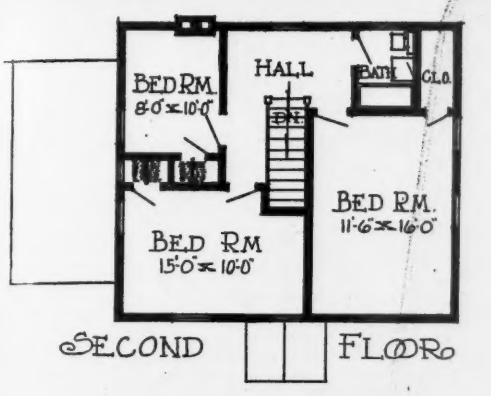
① Ventilating Fan
② Refrigerator
③ Kitchen Cabinet
④ Range
⑤ Breakfast Nook
⑥ Thermostat
⑦ Mirror Door
⑧ Fireplace Throat and Damper
⑨ Built-in Mail Box
⑩ Tub Shower
⑪ Medicine Case
Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute
Heating Plant
Oil Burner
Water Supply System
Hot Water Supply
Water Softener
Radiant Gas Heaters
Casement Windows
Dishwashing Sink
Automatic Cellar Drainer

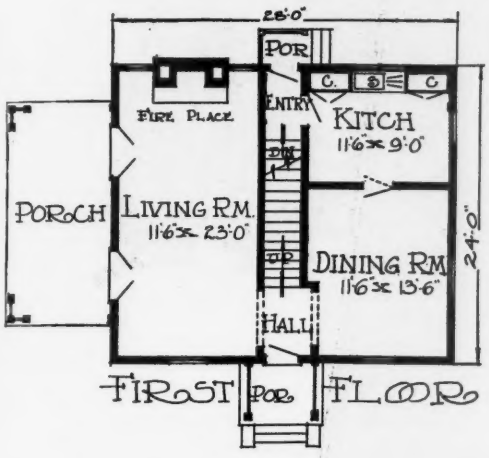


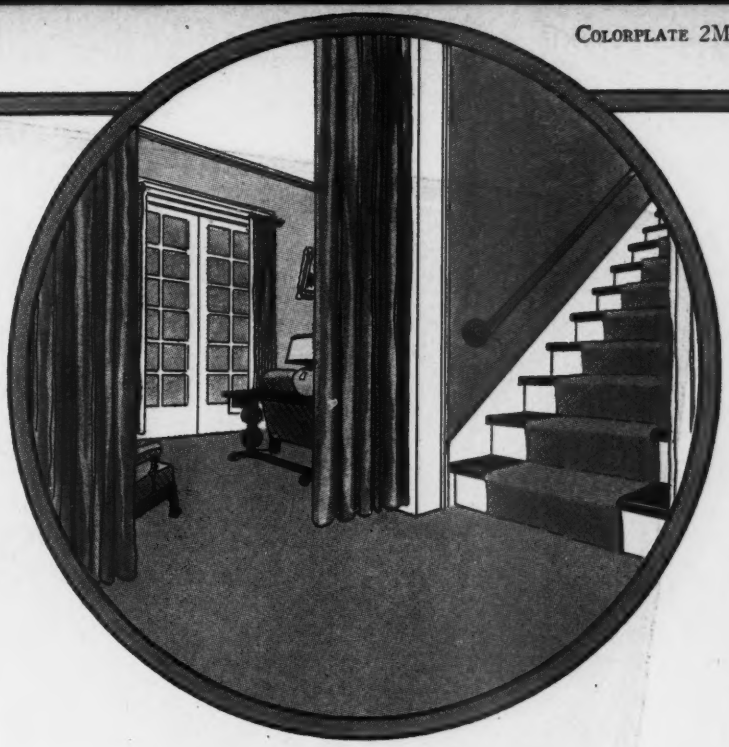
FIRST FLOOR



SECOND FLOOR



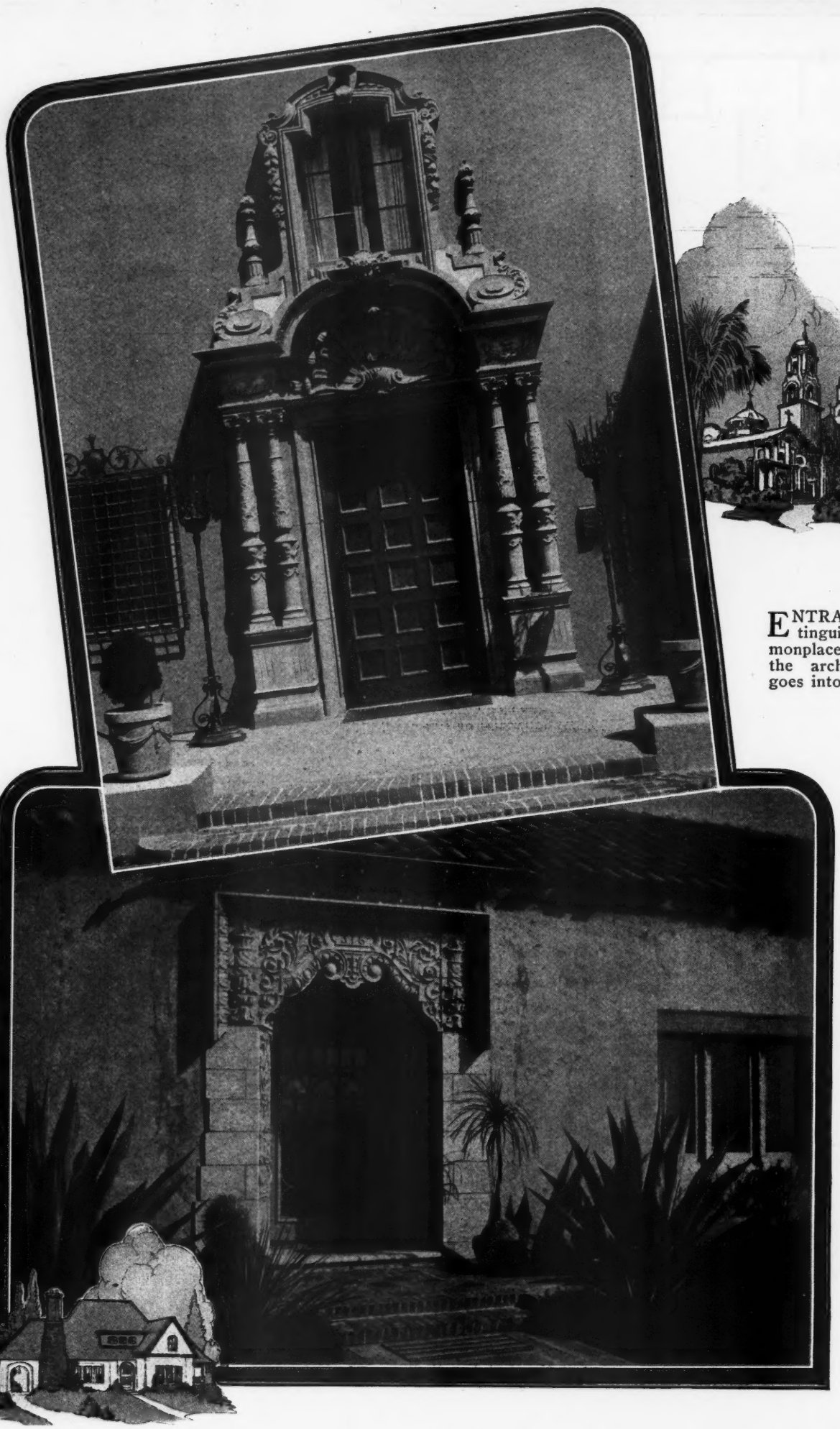




The MIDLAND

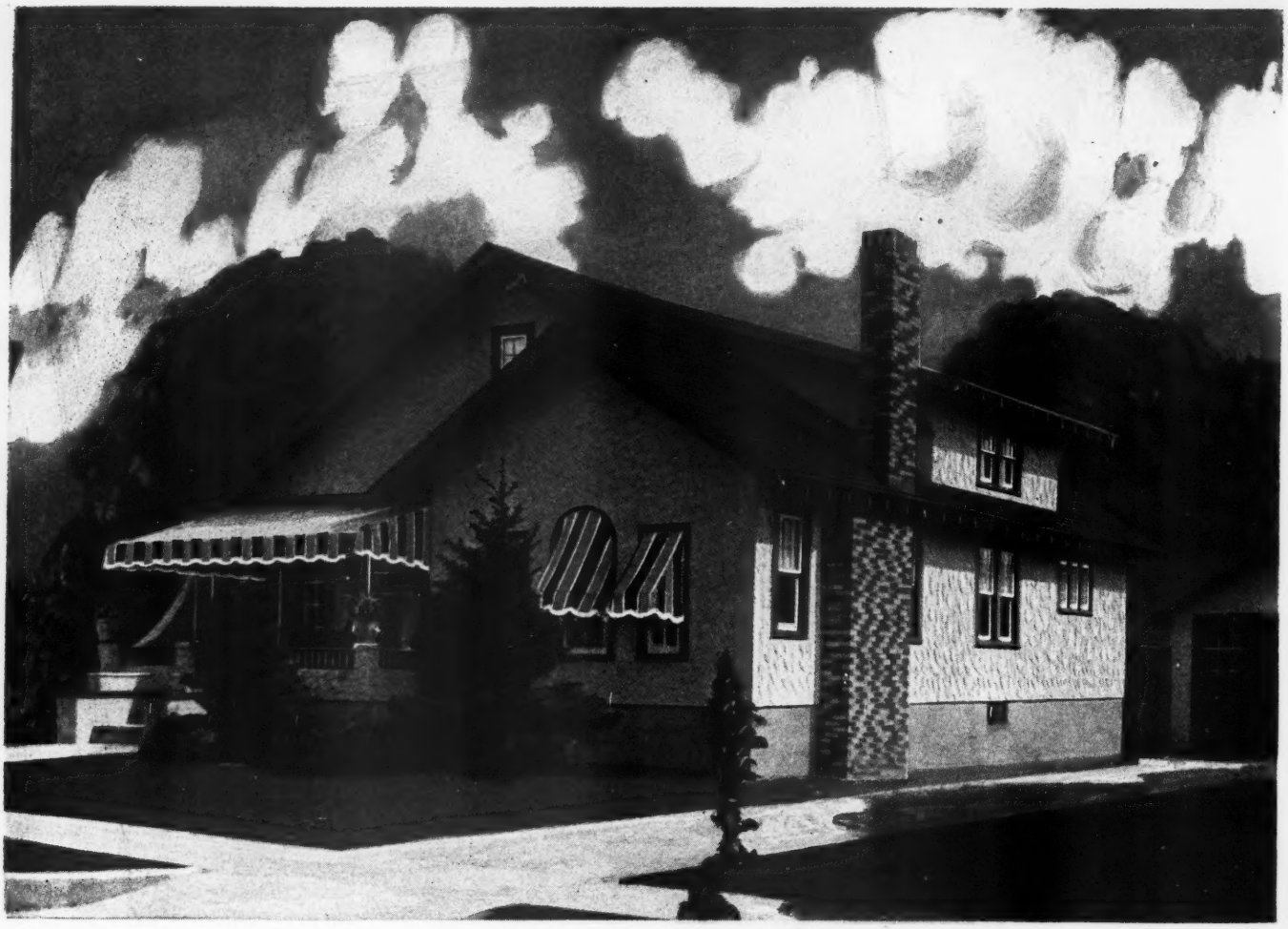
THE straight gable Colonial design is always popular and always in good taste. Here is an example containing six rooms and bath, dimensions on the ground being 24x28 feet. The big porch opening through two sets of double doors out of the living room is screened in summer and protected by storm sash in the winter to make a delightful outdoor retreat.

The central stairhall with Colonial hand rail and stair treads in mahogany, all the rest of the trim being white enamel, is a regular feature of this type home, as illustrated above.



ENTRANCES are distinguished or commonplace according to the architecture that goes into them.

ENTRANCES are impressive suggesting worth, standing and stability.

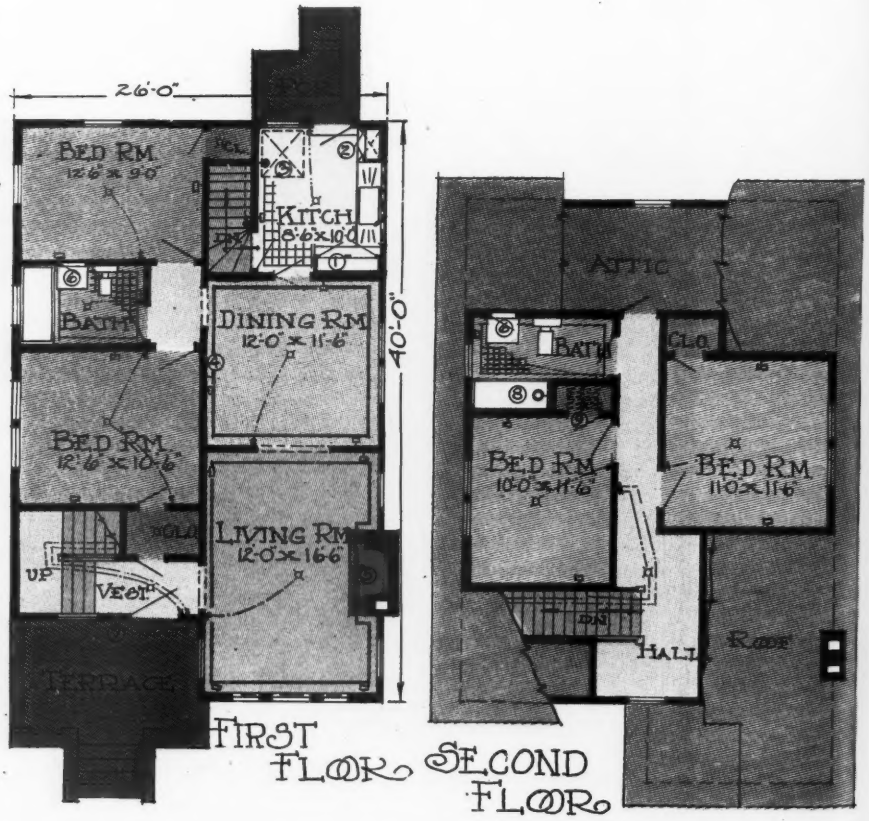


The MOHAWK

HERE we present a comfortable story-and-a-half bungalow, five rooms and bath on the main floor and two rooms and bath upstairs; a surprising amount of livable space making a home 26 x 40 feet.

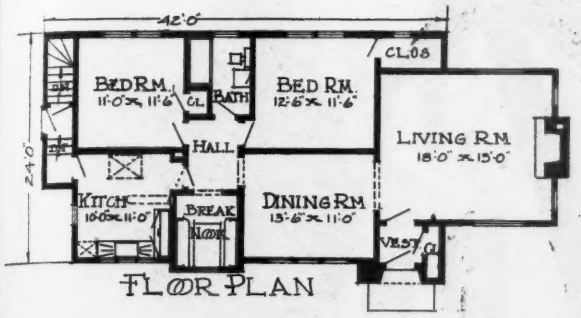
COLORKEED HOME PLANS
TRADE MARK

- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof



Key to Equipment

① Kitchen Cabinet
② Refrigerator
③ Gas or Electric Range
④ Thermostat
⑤ Fireplace Throat and Damper
⑥ Medicine Case
⑦ Built-in Mail Box
⑧ Tub Shower
⑨ Efficiency Wardrobe
Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute
Heating Plant
Oil Burner
Water Supply System
Hot Water Supply
Water Softener
Radiant Gas Heaters
Casement Windows
Dishwashing Sink
Automatic Cellar Drainer



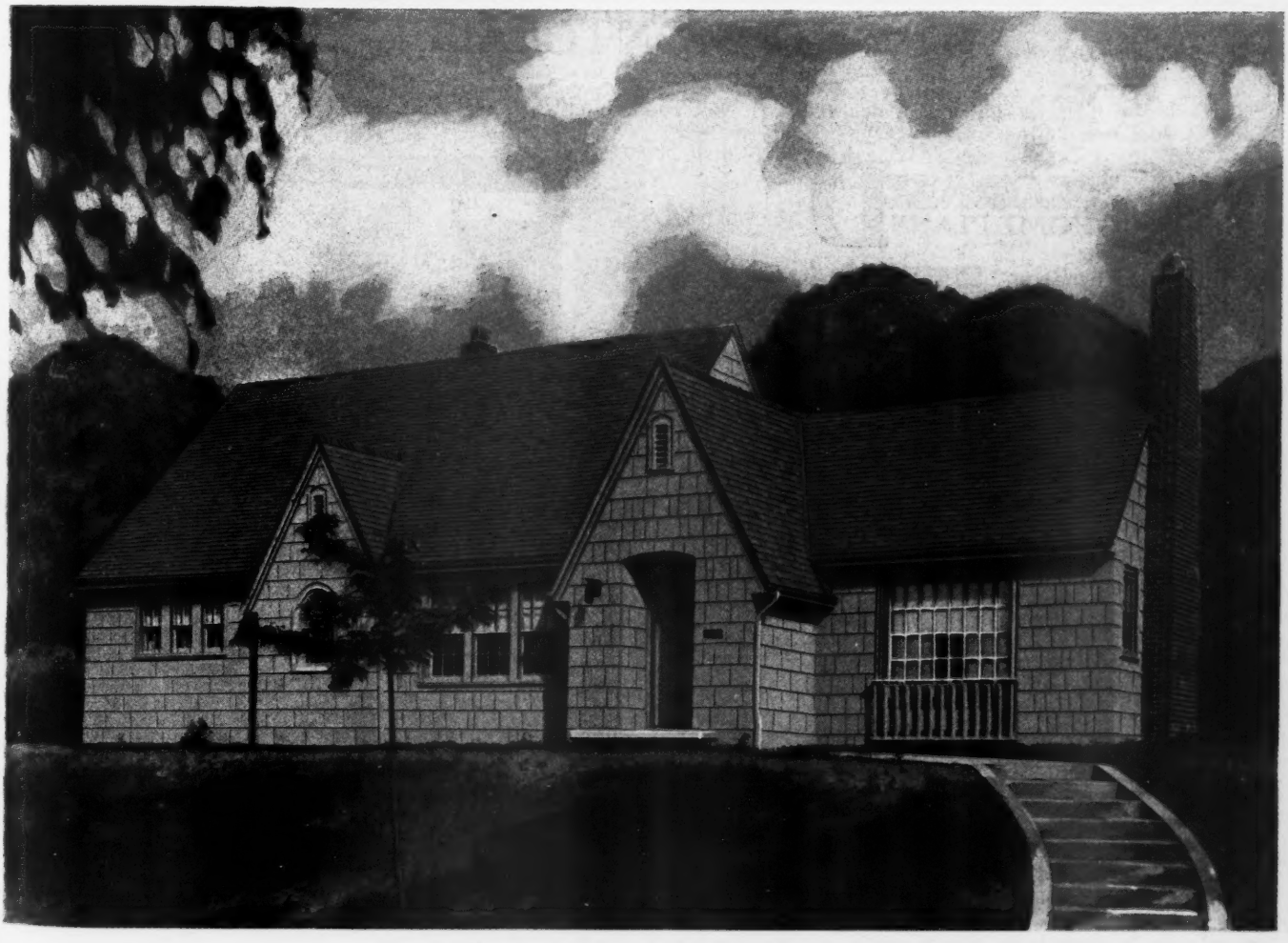
The dining room pictured to the right is lighted by an interesting group of three windows divided into small lights.

The MONARCH

HERE is a home that would appeal to an artist because it not only has a decidedly artistic exterior but also going inside we find the living room is of a studio type with high ceiling and lighted by two immense windows. There are possibilities in the furnishing and decorating of such a living room that will intrigue the enthusiasm of any art lover.

Aside from the studio living room the balance of the design—dining room, breakfast nook, kitchen, two bedrooms and bath—is laid out in a very practical manner. A disappearing stair placed in the ceiling of the hall makes available the large attic space under the roof in the second floor.

Giant size shingles are used on the side walls and stained a pretty green. They contrast brightly with the orange colored roof.

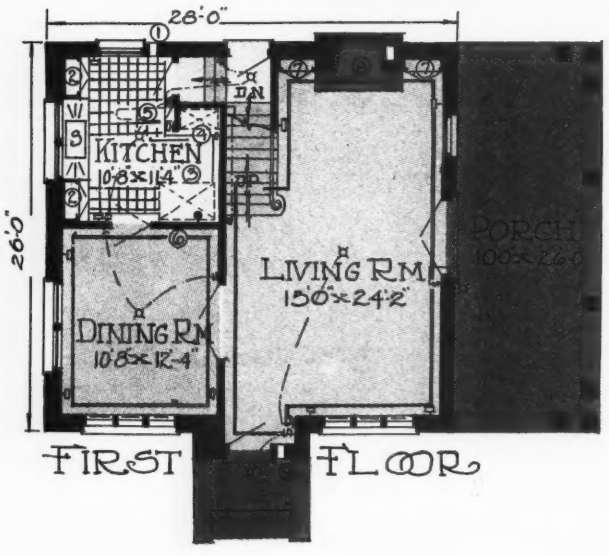


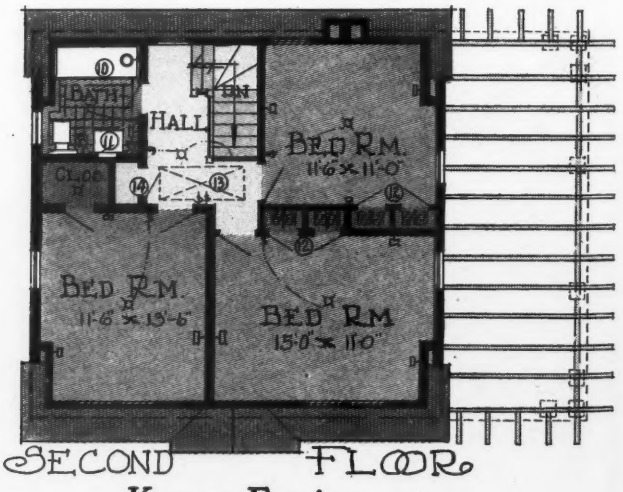
The MONTCLAIR

BRICK for the first story with stucco in the gable ends and around the dormer give this little home a substantial, quality look. Six rooms and bath are arranged very conveniently as shown in the ColorKeeD plans below.

COLORKEED HOME PLANS
TRADE MARK

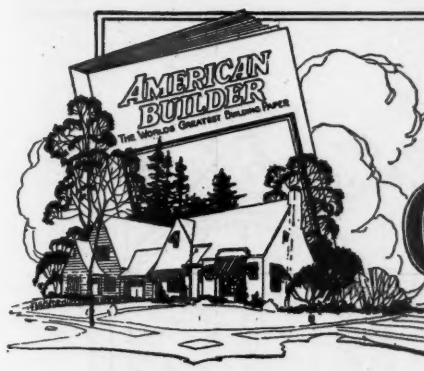
- Living Room
- Dining Room
- Kitchen
- Pantry
- Halls
- Closet
- Bed Room
- Bath and Lav.
- Porch
- Roof





Key to Equipment

① Ventilating Fan
② Kitchen Cabinet
③ Gas or Electric Range
④ Refrigerator
⑤ Built-in Ironing Board
⑥ Thermostat
⑦ Bookcases
⑧ Fireplace Throat and Damper
⑨ Built-in Mail Box
⑩ Tub Shower
⑪ Medicine Case
⑫ Efficiency Wardrobes
⑬ Disappearing Stairs
Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute
Heating Plant
Oil Burner
Water Supply System
Hot Water Supply
Water Softener
Radiant Gas Heaters
Casement Windows
Dishwashing Sink
Automatic Cellar Drainer



OUR FRONT COVER HOME

A Design Reminiscent of the Cottages Always Associated with Picturesque Scenes Along the Highways of France

ONLY in the cottage architecture of France could be found the inspiration for the house which is pictured on the front cover and further developed in the photograph and plans reproduced on this page and the pages that follow. In line and form, as well as in material of construction, it is French and, in the interior, though we find it so thoroughly modern as to meet the demands of the most exacting American householder, the spirit of the French cottage is still preserved.

Plain stuccoed walls, small paned windows, simple chimney of brick, solid plank door, low protecting roof lines, all combine to form a satisfying whole and the effect is ably set off by shrubbery planted closely about the foundation line. A pleasing blend of chimney and entrance details goes far to accomplish an atmosphere of welcome.

The entrance opens into an entry way and a hall from either side of which plastered arches admit us to the living room and dining room. The former is not large, but its effect of spaciousness is enhanced by the arched ceiling as well as by the masonry of a charming fireplace.

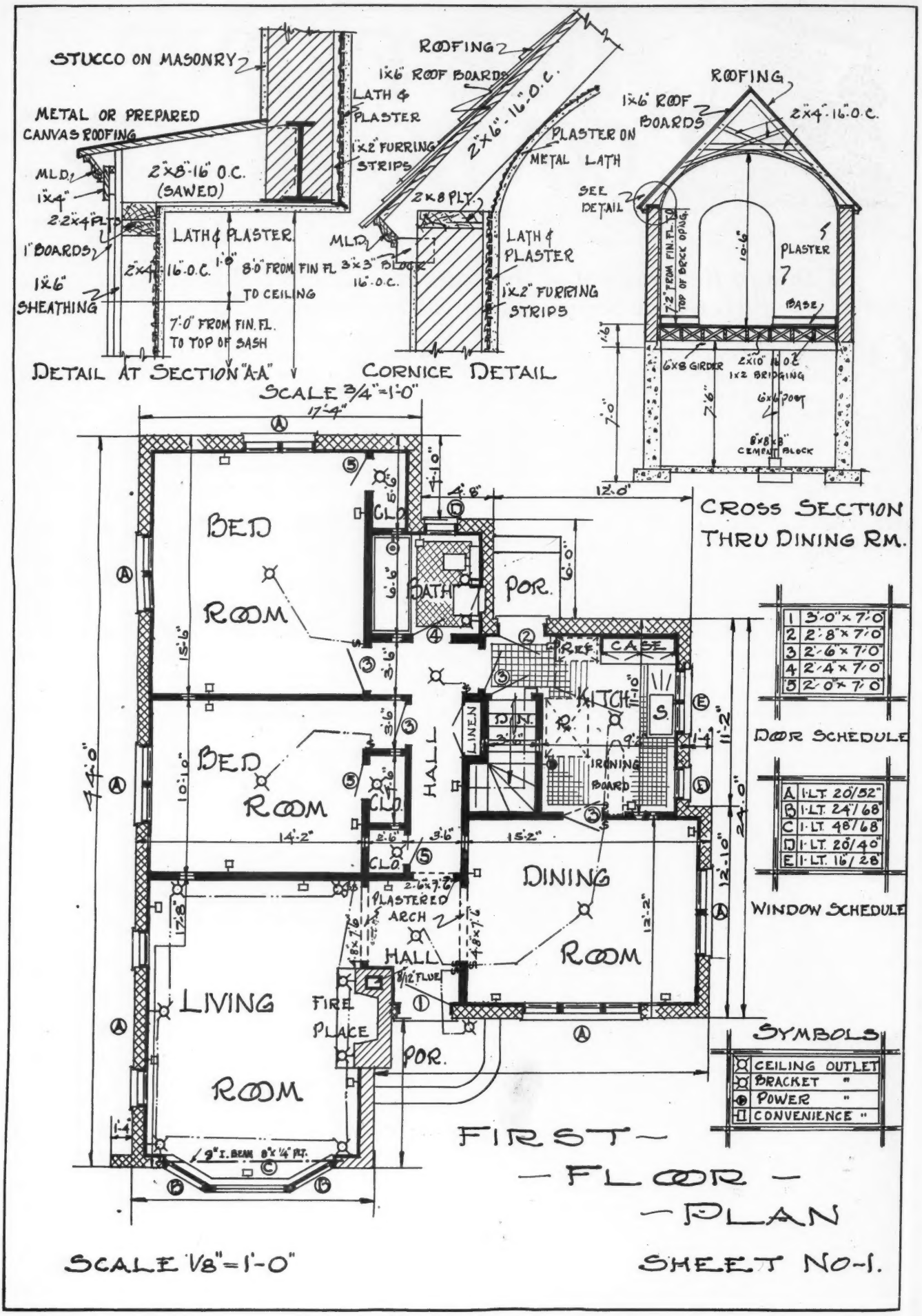
Directly to the rear of the dining room is a kitchen which is one feature presenting a wide departure from the Old World idea. It is a small, compactly designed room, with efficiency written on its every feature, distinctly a room of the modern apartment type.

Doorways from the entrance hall and also from this kitchen open into a central hallway which serves as the means of reaching the sleeping quarters at the rear. Off this hall there are two bedrooms and at the end a bathroom. Each bedroom is provided with a closet of comfortable size while an extra closet and a linen closet are placed in the hall. There is also a small rear porch with a service entrance from the kitchen.

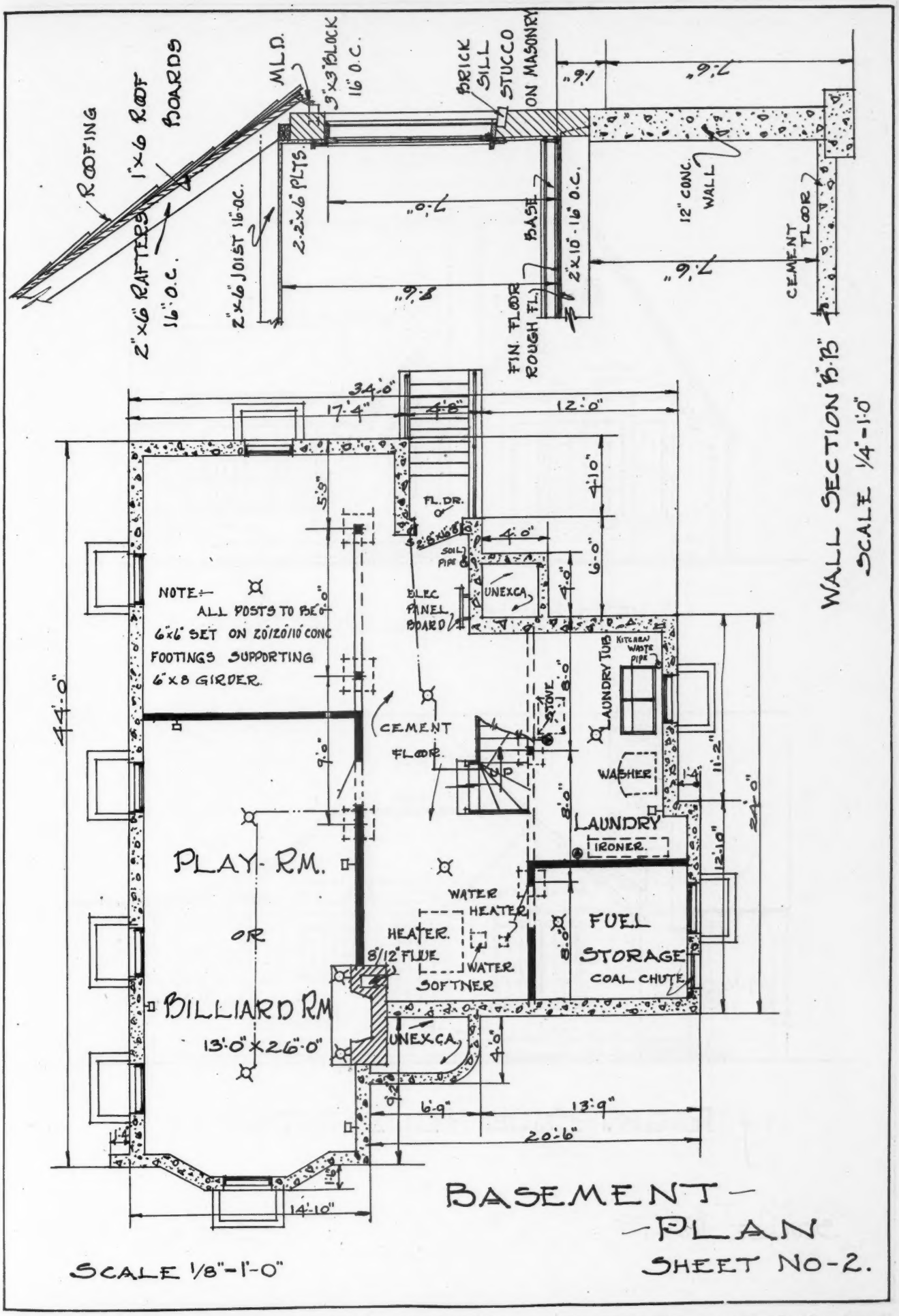
In accord with ideas which have seen a wide development within the past few years, the basement space has been given a consideration unheard of in olden house designs. The fuel room is tightly partitioned to avoid the scattering of dust and dirt over laundry and other space. The heater is placed close by for convenience as well as for most efficient heating. The laundry is quite accessible, close by the basement stairs and directly below the kitchen.

It is the far corner of the basement, below the living room, however, which shows the greatest departure in the use of basement space. Here has been finished a long room which may be used as a children's play room, a billiard room or general purpose "man's room."

A French Cottage in All Its Charming Appearance, but a Modern American Home in the Adaptation of Its Design Describes Our Front Cover Home, the Plans of Which Are Shown on the Pages Which Follow.

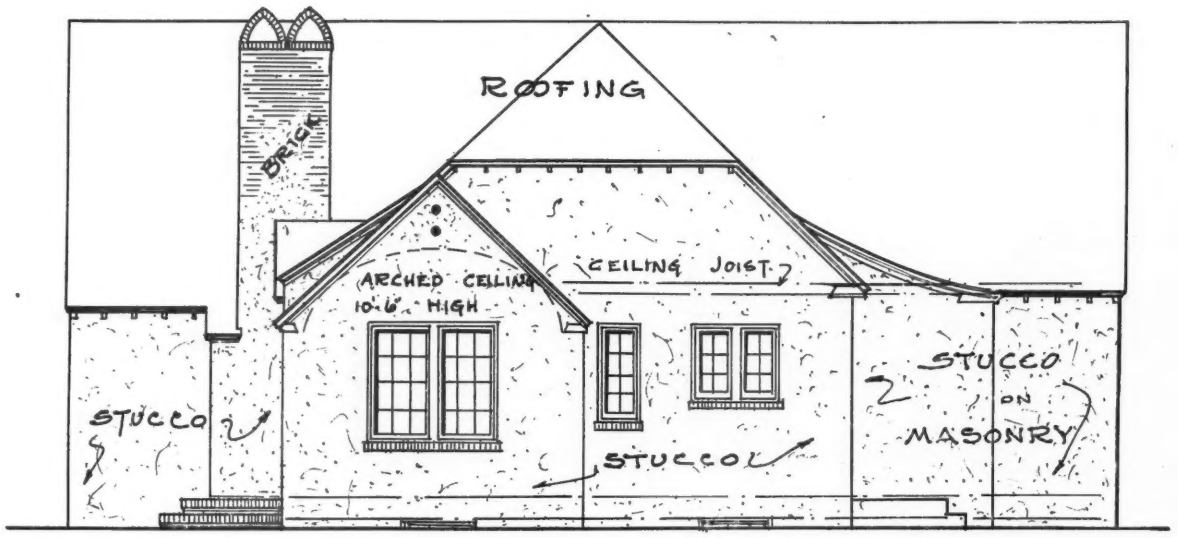


A Compact Five-Room Cottage Design Has Been Developed for Our Front Cover Home with an Arched Ceiled Living Room, Plastered Arch Doorways, and Other Details Carrying Out the Style Effect.



The Feature of the Basement Plan Is the Provision of a Billiard Room or Play Room with a Big Cheerful Fireplace at One Side. Elevation drawings will be found on the next two pages.

FRONT-ELEVATION

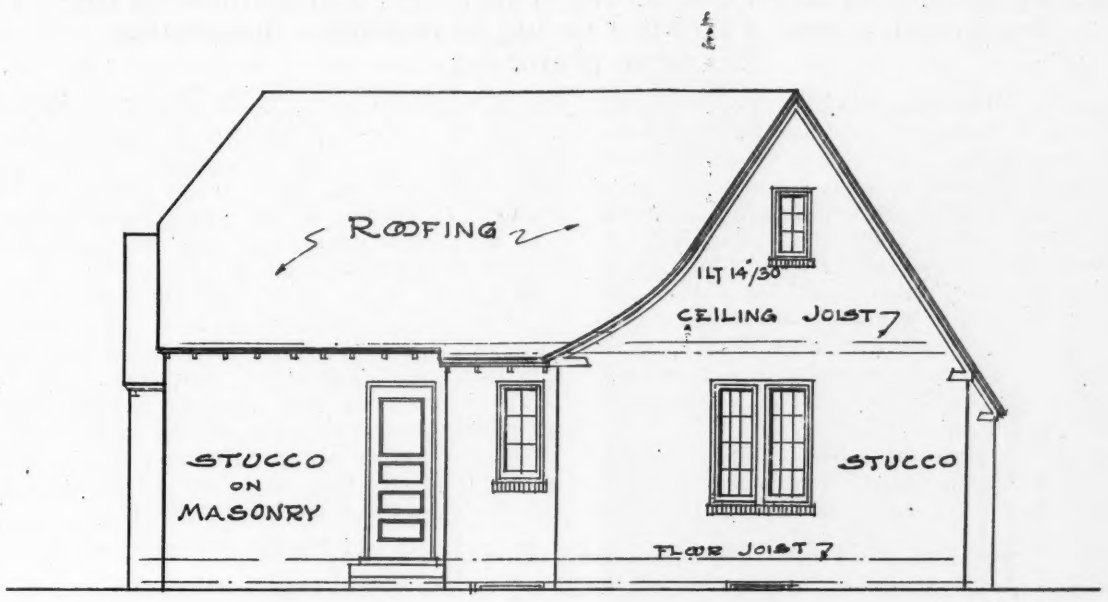


RIGHT-SIDE-ELEVATION

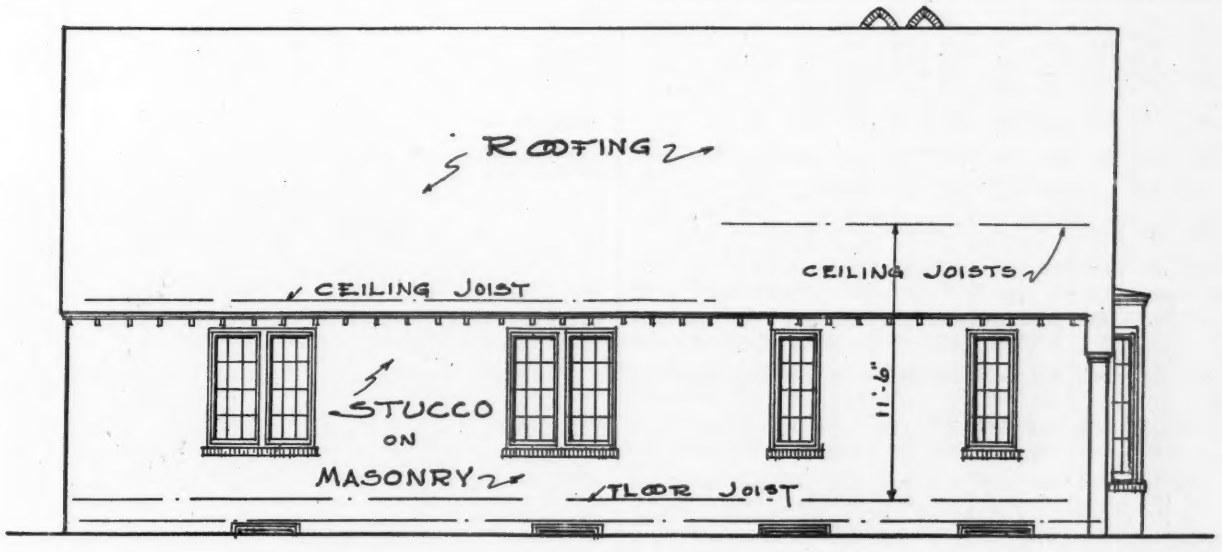
SCALE 1/8"=1'0"

SHEET NO-3.

Here Are Seen the Front and Right Side Elevations of Our Front Cover Home, Showing the Treatment of Roof Lines Which Are So Highly Important in Achieving the Style Effect of the House.



REAR-ELVATION



LEFT-SIDE-ELEVATION

SCALE 1/8"=1'-0"

SHEET NO-4.

Rear and Left Side Elevations Are More Simple Than Those Shown on the Opposite Page, but Also Play Their Part in Telling the Complete Construction Story of Our Front Cover Home.

BEFORE BUILDING—
Check Your Joist Sizes With This Chart

Greater strength, availability and economy urge the use of 10″ or 12″ joists. The additional number of feet required is economical because these are standard sizes produced in larger quantities in ordinary lumber manufacturing practice, and, there is a saving in masonry, in heating and in plumbing

THE table of interchangeable joist sizes, which the Engineering Department of the Southern Pine Association recently designed so that thicker and narrower joists might be used in place of those now being generally specified, has been hailed as a genuine innovation of merit by the building trades and professions.

Formerly most specifications called for the 14 and 16-inch joists, as it was generally believed that these sizes only were sufficiently strong to carry the stresses placed upon them. The engineering department, making a study of the situation, discovered that this belief was entirely unfounded. The investigation developed the fact that narrower but thicker joists were equally as strong.

Therefore, the accompanying table of interchangeable joist sizes was prepared, showing how the substitution could be made and pointing out its advantages. Knowing that the building trades and professions would be interested in learning of the discoveries of the Southern Pine Engineers, copies of the table were mailed to architects, engineers, contractors and retail lumber dealers all over the country. In addition to this, larger reproductions of the table were made on heavier paper and furnished to the retailers so that they might be hung on the wall.

As a result, letters of approval and commendation have been received by the Southern Pine Association for its enterprise in investigating the possibilities of interchangeable joist sizes. The former restriction of the trade to 14 and 16-inch sizes being lifted, the selection of joists is accordingly extended almost without limit. The 10 and 12-inch sizes, which now provide stress values equal to and frequently greater than the 14 and 16-inch sizes formerly did, can be bought at much lower prices.

INTERCHANGEABLE JOIST SIZES

From this table may be selected 8 in., 10 in. or 12 in. joists that may be used in place of joists of greater height. In every case the interchangeable sizes given will carry an equal or greater load. You will save on masonry, plumbing and heating and secure greater strength by making such a substitution.

TABLE OF INTERCHANGEABLE JOIST SIZES FOR SOUTHERN PINE

Based on Fibre Stress of 1600 lbs. and shear of 125 lbs. including live and dead load *

Span Feet	30#+D.L.		40#+D.L.		50#+D.L.		60#+D.L.		70#+D.L.		80#+D.L.		90#+D.L.		100#+D.L.		110#+D.L.		120#+D.L.		130#+D.L.		140#+D.L.		Span Feet
	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	12″	16″	
9	2x4	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x8	2x6	2x8	2x6	2x8	2x8	2x8	2x8	2x8	2x8	2x8	2x8	2x8	9
10	2x4	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x8	2x6	2x8	2x8	2x8	2x8	2x8	2x8	2x8	2x8	2x10	2x8	2x10	2x8	2x10	10
11	2x6	2x6	2x6	2x6	2x6	2x8	2x6	2x8	2x8	2x8	2x8	2x8	2x8	2x10 3x8	2x8	2x10 3x8	2x8	2x10 3x8	2x10	2x10 3x8	2x10	2x10 3x8	2x10	2x10 3x8	11
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26	2x10 3x8	2x12 3x10	2x12 3x10	2x14 3x12 4x10	2x14 3x10	2x16 3x12 4x10	2x14 3x12 4x10	2x16 3x14 4x10	2x16 3x12 4x10	3x14 4x12	2x16 3x14 4x12		2x16 3x14 4x12	3x16	3x14 4x12	3x16	3x14		3x16		3x16		3x16		26

*A 10-lb. plastered ceiling may be provided for by selecting the size for a 10-lb. heavier live load.

Top Line in Table Shows Desired Live Load in Pounds Plus Dead Load (+D.L.). The second line shows spacing of joists, center to center.

Building from the Top Down

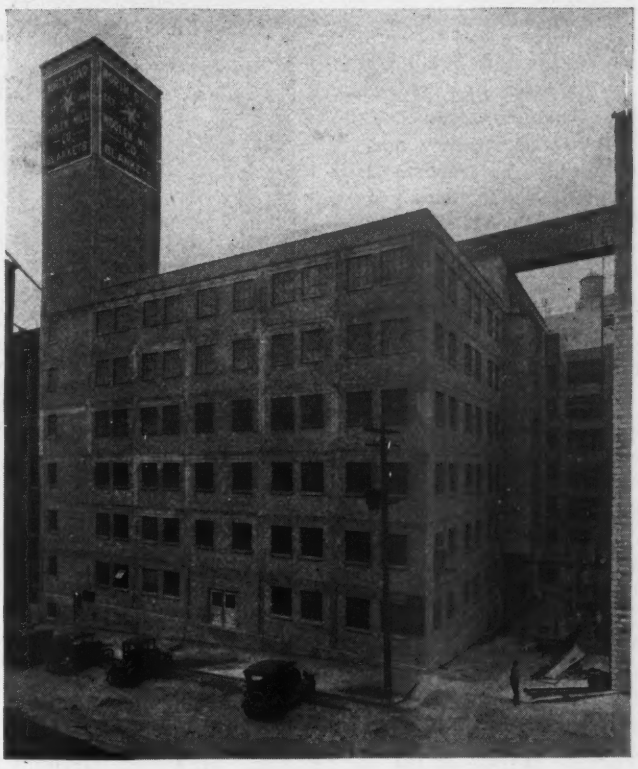
How the C. F. Haglin and Sons Company, of Minneapolis, Handled an Unusual and Difficult Construction Problem

A MOST unusual and exceedingly difficult problem in building construction was presented to the C. F. Haglin & Sons Company, Minneapolis, Minn., contractors, when the North Star Woolen Mill Company, of that city, sought its services in the erection of a new factory building. Ordinarily the erection of a six story factory building would be a comparatively simple problem for a well organized construction company, but in this case there were certain conditions which complicated the problem.

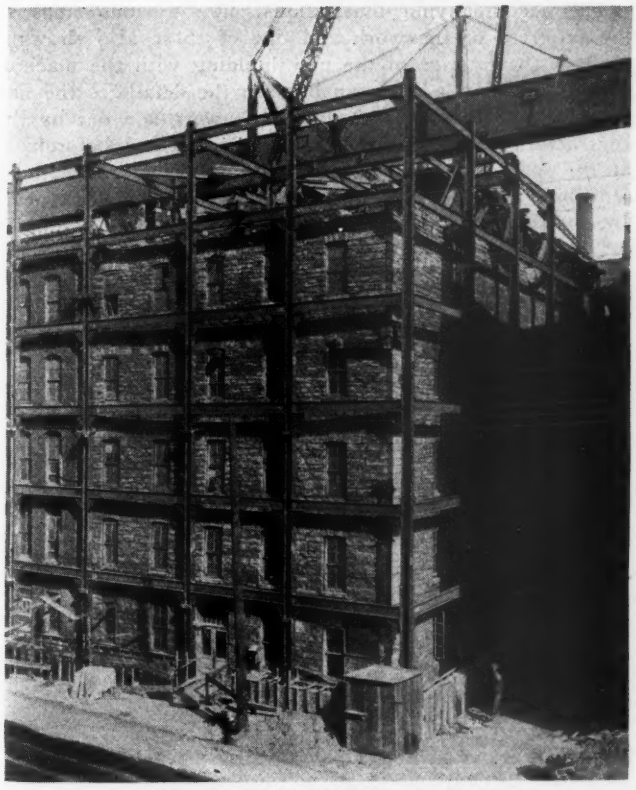
The new building was to occupy the same site as the old building. The machinery used in the old factory was to be transferred to the new building. Both the construction of the new building and the transfer of machinery must be accomplished without materially interrupting the production of the factory. At first glance these conditions would seem impossible to meet, but C. F. Haglin & Sons Company met them and carried out the contract in a highly satisfactory manner.

For over 50 years the North Star Woolen Mill Company has manufactured high grade woolen blankets. The site on which the old factory was located is a very desirable one in the center of the famous Minneapolis flour milling district and was originally chosen because of its close proximity to cheap water power. The old building had been built in 1864 and was typical of that period, with heavy limestone load bearing walls and timber construction for the interior columns and floors.

Additions had been made to the old building from time to time, the last one being two additional floors which were suspended from trusses spanning the width of the building to the outside walls. Thus the building was five stories in height with the roof and the fifth and fourth floors suspended from old wooden trusses. The building measured approximately 57 feet wide and 125 feet long. It was built over a canal which conducted water from the Mississippi River to an old turbine chamber located approximately 50 feet below the curb line.



The New Factory Building of the North Star Woolen Mill Company, Which Was Erected on the Site of the Old Building, Without Interruption of the Manufacturing Operation.



The Old Building Completely Encased by the Steel Frame of the New Building Which Was One Story Higher and Slightly Larger in Width and Length.

The first problem, for the contractors, was to lay out a new, thoroughly fireproof building which would meet the most rigid requirements of the owners as to location of the heavy machinery and line shafting, the elimination of vibration and the elimination of air currents so as to control the humidification of the air. These problems were thoroughly studied and a satisfactory design was worked out and approved by the owners. The problem then became one of actual construction and scheduling of construction so as to avoid loss of time in the production of the mill.

The new building was to be constructed with a structural steel frame, reinforced concrete floors and brick and steel sash exterior walls. The principal reason for selecting structural steel frame construction for this comparatively low building was that it presented the only solution for erecting the new building from the roof down, so that the machinery could be transferred to the new floors without interrupting the manufacturing process of the mill. The new building was to be six stories in height and also somewhat wider and longer than the old building so that it would entirely envelop the old structure.

The old trusses supporting the roof and fourth and fifth floors of the old building were inadequate to support the necessary construction derricks required for the erection of the new steel frame. It was, therefore, necessary to

build new temporary wooden trusses, spanning the old building from wall to wall, on which to place two steel stiff leg derricks with 85-foot booms. These derricks were used both for erecting the new building and for demolishing the old building and for transferring the heavy mill machinery from the old building to the new one.

While the construction equipment was being placed over the roof of the old building, the contractors were driving caissons to support the new building to solid rock and preparing new foundations over the old turbine wheel room and canal. As soon as the footings were in place the structural steel was erected as rapidly as it was received from the fabricators.

Since the area of the new building was greater than that of the old building, it was a comparatively easy matter to erect all the exterior columns and spandrel beams from the footings to the roof of the new building entirely outside of the old building. However, it required very delicate handling and accurate measurements to place the interior columns and beams as all this material had to be hoisted over the roof of the old building, put in a vertical position and dropped through holes not over two feet square in the roof and all the floors of the old building to the footing base plates, without disturbing any of the operating machinery in the old building.

Here Is Shown the Progress of the Construction Work. Two stories of the new building have been completed, the machinery transferred to them and two stories of the old building demolished.

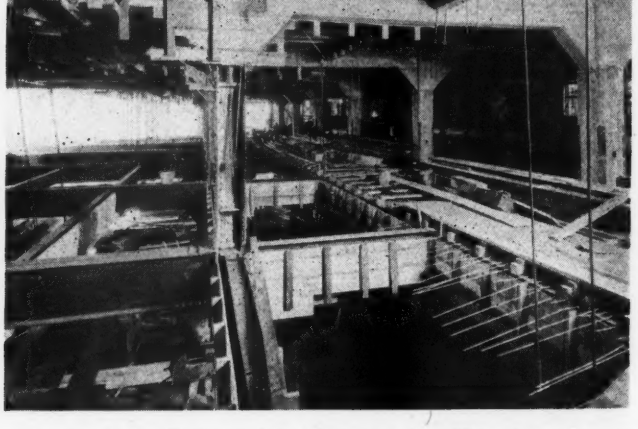
In this way all of the interior columns and most of the interior beams and girders were put in place before the old mill was destroyed. Wherever it was impossible to install necessary beams and girders to support the columns laterally, because of interference with mill machinery, these columns were thoroughly braced with timbers and cables so that they could support the load which was to be applied from the top.

When the steel frame of the new building was completed the construction equipment was transferred to the new steel frame and the roof poured. The sixth floor was then concreted and enclosed with brick walls and steel sash. With the sixth floor completed it was then possible to move all machinery and materials from the top floor of the old building into the sixth floor of the new building. The fifth floor of the old building was then demolished.

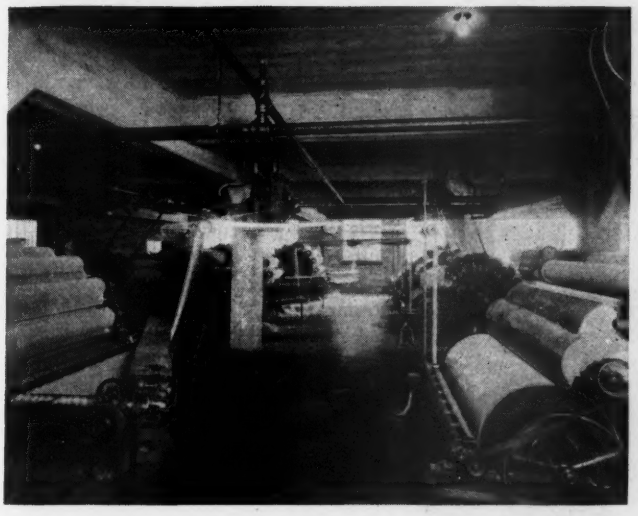
In this manner the completion of the new building, transfer of machinery and demolishing of the old building progressed from the top downward. On each floor of the new building one-half of the floor was poured, the machinery transferred to it and put into operation while the other half of the floor was being prepared and poured. In this way the machinery was in constant operation in both the old and new building at all times. The old building was not completely demolished until the third floor of the new building had been completed and the machinery transferred to it, when the first story of the old building was finally torn down.

The accompanying illustrations show various steps in the progress of the work and one of these also shows a view of the interior of the new building with the machinery in operation. Here can be seen the details of the line shafting and sprinkler layouts which were laid out by the contractors with the inserts and bolts located beforehand on the plans. This gave a neat, workmanlike result without redrilling and plugging of inserts with unfinished appearance which would have resulted if they had been put in

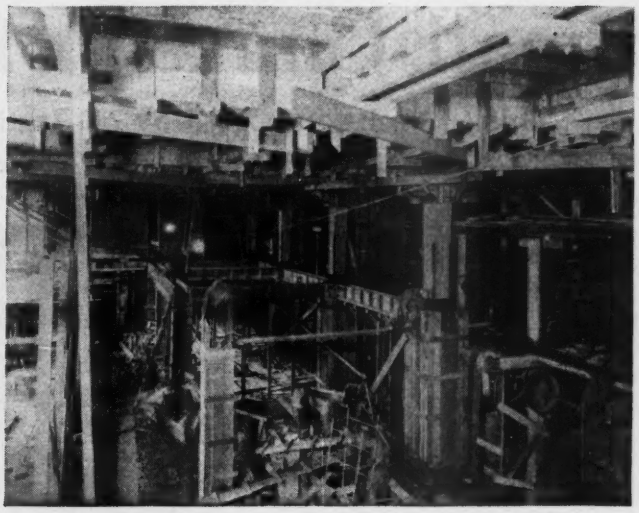
Temporary Wooden Trusses Were Placed on the Outer Walls of the Old Building to Support the Construction Equipment Until the New Steel Frame Was in Place.



Some of the Factory Machinery in Its New Location on One-Half of the Fifth Floor of the New Building and in Operation While the Other Half of the Floor Was Being Cleared for Pouring.



An Interior View of the New Building With the Machinery in Place and in Operation, Showing the Details of Line Shafting and Sprinkler Layouts.



The First Floor of the New Building Which Was Built Entirely Independent of the Rest of the Building and Carried on Separate Columns and Footings.

after the floors were poured.

Another of the illustrations shows the first floor of the new building under construction. This floor was built entirely independent of the remainder of the building. Due to the fact that this floor was to support very heavy vibrating machinery, it was desired to eliminate this vibration from the rest of the building. To accomplish this all of the columns and walls of the main building were insulated with heavy cork board and the first floor was carried on independent columns to its own separate footings.

The manufacturing output of the factory was not interrupted during the entire process of erecting the new building with the exception of one or two days when certain heavy steel work was being handled and it was thought wise to shut down the plant to eliminate the danger of any possible accidents to the operators of the mill. During the year in which this construction work was going on, the output of the factory, in finished blankets, was greater by 12,000 pounds than it had been during the previous year.

The problems involved in the transfer of machinery during this construction would be more apparent to anyone familiar with the machinery required on a woolen mill of this kind. Extreme care was necessary in transferring it from one building to the other. Some of this machinery weighed as much as 15 tons per unit and on one floor alone there is concentrated $250,000 worth of equipment. During the whole construction program none of the machinery was damaged in any way.

Second Mortgage Practice

Wide Diversities in Practice Found in Collection of Facts Made as Step Toward Lowering of Home Financing Costs

JUNIOR financing as applied to home buying—the process of bridging the gap between the amount that can be borrowed on a first mortgage and the amount the family of would-be home owners have been able to accumulate as savings toward the purchase—shows wide divergences in present business practices and in interest rates. There is general lack of understanding as to risks involved and consequent proper costs, with state laws and their diversities playing a part in causing the discrepancies, standing in the way of more business-like second mortgage practices, and so blocking the lowering of financing costs for the home buyer, according to a general survey of junior financing practices which has been made by the National Association of Real Estate Boards.

The survey tabulated data as to second mortgage rates and practices and land contract rates received from 51 cities representing 36 states. It constitutes the most detailed examination which has so far been made by any institution as to the actual present cost of the junior financing of homes.

An interest rate of 6 to 8 per cent on second mortgages is common; and, on loans of one year, commissions, bonuses or discounts of 5 to 10 per cent are usual, with the possibility of there being bonuses and discounts of such percentages and commissions in addition, the survey found. Moreover, such mortgages, if resold, are usually discounted at 15 per cent or more, such resales presumably being soon after execution.

"With necessary cash payments for equities varying from 5 to 40 per cent, commissions or bonuses varying from 3 to 10 per cent for one year and from 2 to 20 per cent on three-year loans, and such loans discounting at from 10 to 35 per cent, it becomes clear that the problem of putting the junior financing of homes on a sound, profitable and responsible basis, fair to all concerned, is one of general importance," Henry R. Brigham, of Boston, points out in summarizing the survey of findings. Mr. Brigham was chairman of the conference of national organizations interested in the junior financing of homes which initiated the survey.

The survey was made by the National Association of Real Estate Boards in conjunction with a study of the whole subject of junior financing undertaken by the association in co-operation with the American Title Association, the American Savings, Building and Loan Institute, the Institute for Research in Land Economics and Public Utilities and the Massachusetts Institute of Technology. It is a step in the work begun six years ago by the National Association of Real Estate Boards to bring home building and home financing the advantage of a better understanding of the actual conditions in the making of junior liens, the actual risks involved in such liens, and the proper necessary costs proportionate to the rise.

It is planned to follow the survey with a further study of the factors shown to be involved, looking toward a standardization of the junior financing comparable with that already established in the first mortgage field.

(Continued to page 127)

Small Church of Unusual Beauty

This Church Supported by 200 Italian Fishermen of San Diego Has Been Made a Thing of Rare Beauty by the Artist Fausto Tasca

ROMANESQUE art has been combined with modern processes by Fausto Tasca, an artist from Italy, trained in the Academy of Fine Arts at Venice, to make a small fisherman's church at San Diego, California, a thing of rare beauty. For three years he has labored alone in the building, decorating walls, windows and ceiling with oil paintings which have transformed the interior into a beautiful reminder of Biblical times.

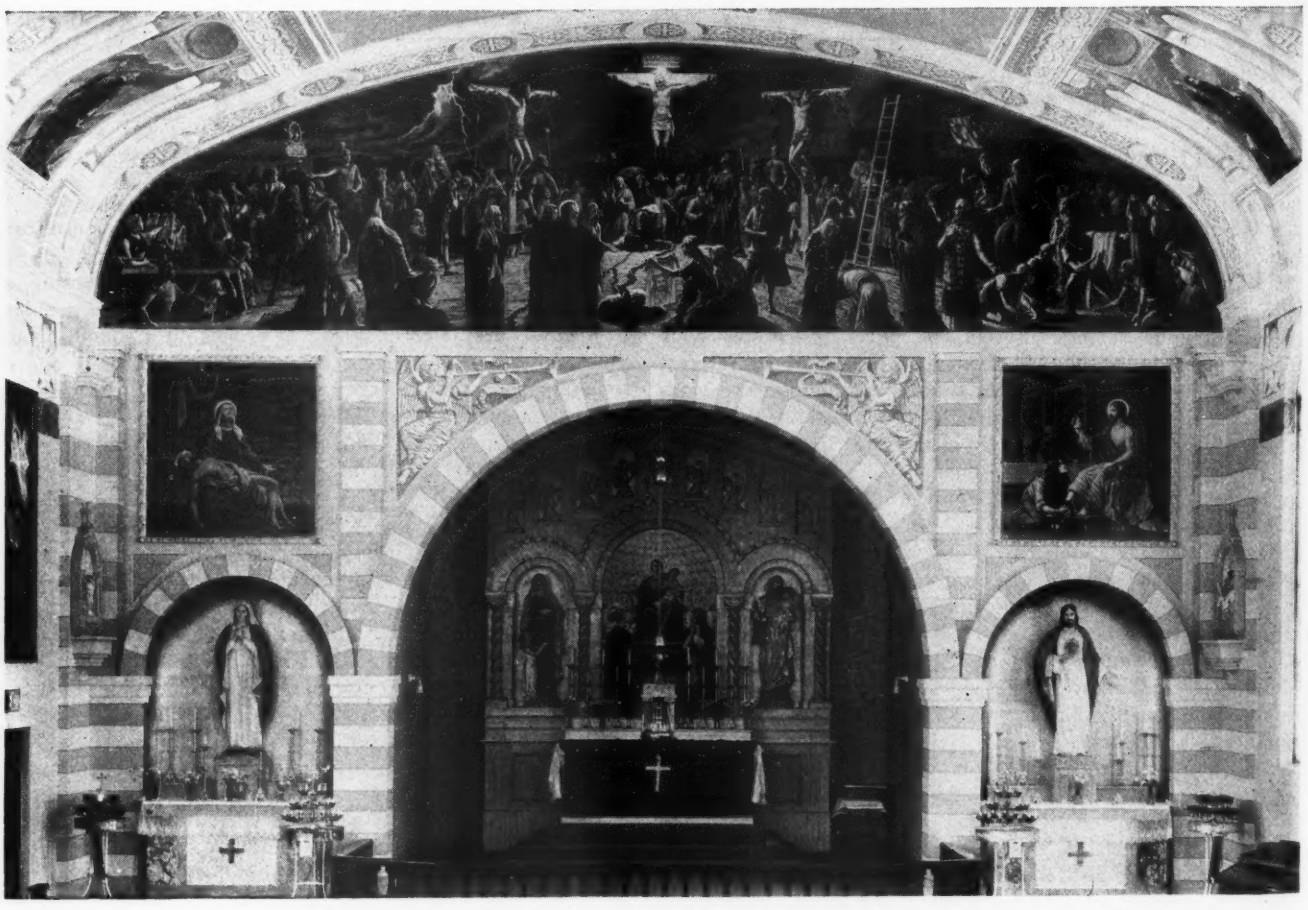
Three achievements of the artist stand out. From a mechanical point of view the windows present a new idea in church and public building decoration. They have the appearance of leaded glass and stained panels, yet they are made of a single piece of glass and the "lead" which the casual observer sees is imitated by heavy mineral strips, which will cling permanently to the glass.

Tasca painted the windows with a prepared secret combination of chemicals and varnish. At the outset he imitated the different glasses, then proceeded with the painting, his preparation being non-transparent and presenting in reality the effect of an oil painting. The colors are permanent and will not wash off. The windows, numbering 13 to represent the 13 Biblical miscries, are of a general Romanesque style, with the borders of pure Romanesque.

Fausto Tasca, Trained in the Academy of Fine Arts, Venice, Italy, and the Industrial Art School at Bassano, Italy, Has Devoted Three Years to the Decoration of a Small Fisherman's Church in San Diego, Calif.

Above the altar is an oil painting of the Crucifixion, 40 feet long and 12 feet high at the center, tapering gradually toward the ends. This Tasca considers his greatest work, having just completed it after intermittent work for the three-year period. He based the painting on a model, which he constructed of plaster of paris at his Los Angeles home, one-twelfth as large as the completed canvas.

The artist achieved his effect of balance in the painting by employing confusion of the nearly 150 people appearing in the scene. Roman



The Decorations by the Artist Tasca Have Made This Church One of the Most Striking and Unusual Church Buildings in the Country and Unique in the Type of Decoration Which Is Used in the Windows.

soldiers were scattered through the crowd and important people placed in the foreground across the length of the painting, with *hoi polloi* here and there in casual groups.

It is a symbolical painting, intended to be historically accurtate from former paintings and historical and Biblical treatises of the scene.

The ceiling is divided into six equal sections by an ornamental architecture, decorated by original designs typical of the Christian art. On the center of each section is placed a medallion, depicting a Biblical subject of the New Testament, and done in proper perspective for the audience to look at easily, without the necessity of straining their necks and eyes to understand the various parts.

The artist painted the medallions at his home. First he worked out the proper perspective of each in small design, the canvas on which it was painted being stretched in a corner of his studio, at an angle of approximately 45 degrees to the floor. This is not a common practice but it served admirably for Tasca to scan the work in advance and proceed without guesswork as to the final result.

Having completed the canvases, he prepared the ceiling spots where each was to be hung, smoothing the surface until no rough spot which might loosen the cloth remained. The canvas was placed on a cloth-covered "horse" or trestle, painting down, and both canvas and surface accurately measured and marked, in order to insure exact proper placement. Having covered the back side of the painting with a prepared cementing paste, Tasca slowly raised it to the ceiling and smoothed it against the plaster. Once firm, he propped sticks against the canvas at the corners and other points to guard against its ripping off before the paste had dried.

The description of the Romanesque interior of the church (called the church of Our Lady of the Rosary), which is supported by 200 Italian fishermen and their families, can be divided into two distinct parts: the sanctuary and the nave.

ANDREW R. BOONE.

✣

2nd Mortgage Practice

(*Continued from page 125*)

Rapid increase of use of second mortgages in the purchase of homes was reported by 15 of the 51 cities giving data for the survey. Slow increase was reported by 14 of the cities, and a stationary condition in 19. No cities reported any decrease. An increase of responsible second mortgage companies was reported by 18 cities. A promising sign is the increase of more reputable companies coming into the second mortgage field, and the experience of at least one such company in annually reducing its rates as it finds it can do an increasingly large business profitably at decreasing costs.

The Windows of This Church Were Painted with a Process More Brilliant than Stained Glass and a Leaded Effect Obtained in the Single Glass Sheet.

Land Contracts Found Somewhat Less Risk Than Second Mortgages

Land contracts appear to be somewhat less in use than second mortgages, but the prevailing rates of interest on land contracts seem to be about the same, 6 to 8 per cent, and the discount rates if sold are very similar, varying generally from 5 to 10 per cent for one year to 12 to 20 per cent for three years, or 20 to 30 per cent for five years to run, the survey finds. The required down payments where land contracts are used are reported as usually 10 per cent whereas, where second mortgages are used, although many cities report a 10 per cent or less down payment, twenty report 15 per cent or more.

The most striking difference between the two methods of financing seems to be that in the cases of land contracts 19 out of 29 cities reported that only 25 to 50 per cent of payments on account of principal are required before maturity. The land contracts it would seem are therefore considered safer and less troublesome in cases of failure to pay.

Title Laws Cause Discrepancies Which Add to Cost

The laws of the various states play some part in causing the great discrepancies in the second mortgage business, the survey found. The percentages of value of houses on which financial institutions can loan money are generally fixed by law, and these percentages are naturally lower than they would be if more stable real estate mortgage conditions could be established. The title laws in many cities could be changed so as to make one examination, abstract, or certificate satisfy all persons interested in a given piece of property. Finally mortgage laws, particularly as to foreclosure proceedings might in many cases profitably be amended so as to make such proceeding less complicated, less expensive, and more expeditious without destroying reasonable protection to the mortgagers. It is also thought that in some states the taxation and usury laws could safely and wisely be amended for the mutual benefit of all concerned in the mortgage business.

Usury laws are sometimes blamed for making it impossible to do a second mortgage business on a straight interest basis rather than the more usual basis of interest, commissions, bonuses, and discounts all mixed and added together, but the latter basis seems to be more common even when usury laws do not prevent high interest rates.

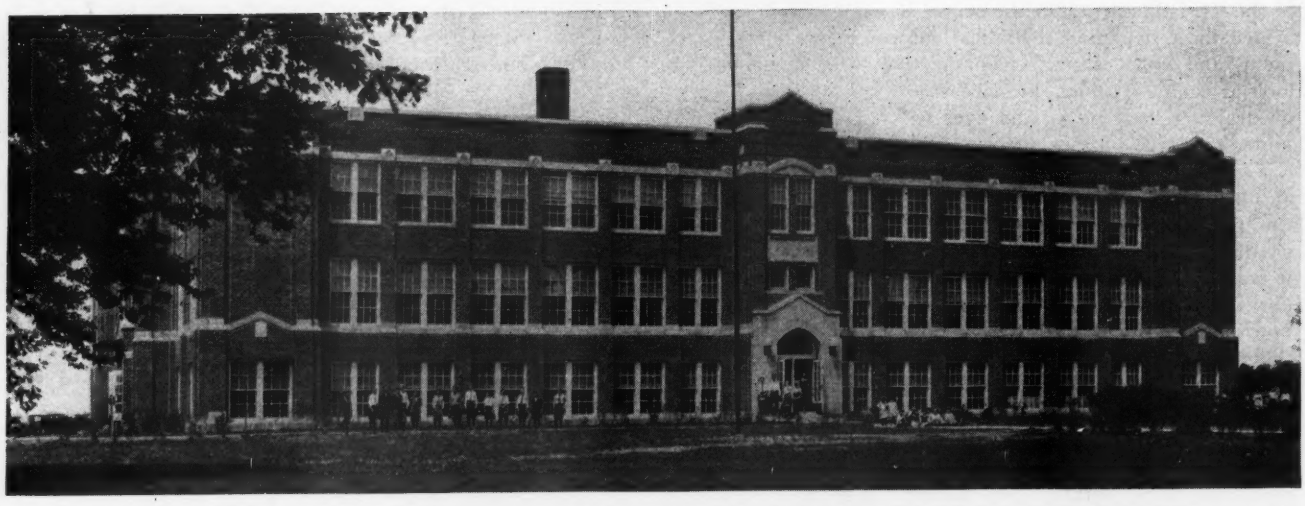
Here are some conditions found by the survey which show why the cost of junior financing must be

(*Continued to page 130*)

An Ideal Consolidated School

This Rural Community School Sets New Standards in the Design and Equipment of School Buildings

W. S. HOLMES, Architect



The Lincoln School, Built by Augusta Township, Michigan, Has Been Described as an Ideal Consolidated School. It is the product of the vision of an educational leader and an interested and skillfull architect.

A NEW school has been built in Augusta Township, near Ypsilanti, Michigan. In these days of modern school building such would not be worth recording were it not for the fact that those who have followed the progress of the rural education, realize what a boon this particular school will be to teachers and pupils in all rural districts.

There is no outstanding reason why the thirteen school districts of Augusta Township should have special benefits heaped upon them. Their fine farm homes and fertile fields can be duplicated over again. Michigan abounds in ruddy faced youngsters.

But the enthusiastic and energetic Dr. Pittman, rural director of nearby Michigan State Normal, dreamed. He visioned the one room rural school with all its perplexing conditions, its inadequately trained teacher, impoverished equipment and unkempt surroundings fading from a picture in which rose a modern educational structure.

He visioned bright faced boys and girls safely and speedily motored to their educational tasks and then, with the day's work done, returned to comfortable firesides and eager parents; of little tots lost in the wonders of the child world, the kindergarten with a real fireplace, blocks and things; of sympathetic, well trained, big hearted teachers; of a unified rural community stimulated and fired by the common purpose of raising and of educating its boys and girls.

Easily dreamed, not so easily done. Patiently he kept at his task. Piercing the armor of tradition, of reaction and of let-well-enough-aloneness, of suspicion and of distrust, and his zeal won the day. It was a great day for rural education in Michigan when the six hundred rural boys and girls of Augusta Township were housed in one of the most modern of school buildings. Standing in its generous five-acre playground, its simplicity of design reflects the sturdiness and character of those who were willing to discard the old for the new.

Erected at an expense of $270,000 the Lincoln Consolidated School is one of the largest rural training schools in the world. Following its disastrous fire in December, 1925, it has been completely rebuilt as a fireproof structure to include 16 additional classrooms.

Full credit must be given the architect, W. S. Holmes, whose ingenious mind and thorough interest in school problems were responsible for the evolution of a building that so efficiently meets the demands of modern education. Working in close co-operation with the administrators and experienced teachers of this rural training school, every effort was exerted in planning educational convenience.

It was to be a school work shop and as such every available foot of wall and floor space was to be put to work. In ordinary school construction the corridor walls are used for support and for carrying flues. In the Lincoln School H-pier sections spaced 10 feet on center support the construction above and at the same time become the exhaust air ducts.

The fresh air flues are carried in the unused corridor space above the 10-foot ceiling. Instead of expensive thick walls, the space between classrooms and corridor is used for built-in lockers, drinking fountains and exhibit cases on the corridor side; on the classroom side the economy and foresight make it possible to use the entire space between piers for filing equipment, cases, coatroom, and closets built flush with the walls.

The old idea was that four walls constituted a class room. Our modern planning consists in combining a science of engineering with the housing and equipping of the working personnel. In other words, school construction must conform to the school program. Kindergarten, grade, home economics, English room, and so forth, not only require different treatment but each educational requirement must be embodied into a scientific structural plan.

The kindergarten in the Lincoln School provides an individual compartment for each child thus furnishing an opportunity for the teaching of individual responsibility in the care of both the child's material and his own compartment. Adjoining practice rooms provide for construction work being kept a period of days when necessary and block cases afford ample storage. Ventilated coatrooms are recessed in the corridor walls and window seats take the place of radiators beneath the low-built window sills. With its cozy fireplace and resilient floors of battleship linoleum, the cheery room contributes to the environment of the modern kindergarten.

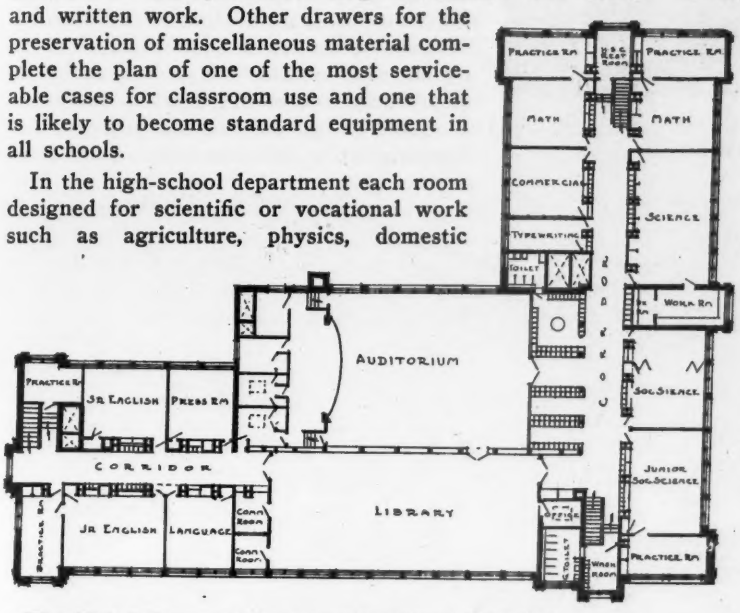
As the child progresses through the grades differently planned rooms satisfy his varying interests. Book and supply cases, which take the place of block cases and coat-

rooms of the lower grades, contain generous accommodations for books, cupboards, for supplies, drawers for the preservation of magazines and mounted display material.

Of special interest is the reading case as part of the built-in equipment of all upper grade and high school rooms. One side of this case contains a magazine section of sufficient size to hold six or seven current periodicals. On the other side are open shelves for supplementary reading while a bulletin board above both sections furnishes display space for current newspaper clippings, pictures or pupils' work.

The lower sections of this case contain two letter file drawers for the systematic filing of standard test results and written work. Other drawers for the preservation of miscellaneous material complete the plan of one of the most serviceable cases for classroom use and one that is likely to become standard equipment in all schools.

In the high-school department each room designed for scientific or vocational work such as agriculture, physics, domestic science, is fitted with cases that are suitable for the subject taught. For instance, the cooking and sewing rooms are adjacent, of three units each, with a door between. The cooking room is also connected to a room of one unit which serves as a kitchen in which the hot lunch is prepared for the school. This hot lunch is served from the cooking room and eaten on tables set in the adjacent corridor.



The Third Floor of the Lincoln School Contains the Auditorium and Library and Upper Grade and High School Class Rooms.

The cooking room is equipped with gas stoves supplied from a small gas plant, and an electric range. Cases are built in between the ventilating piers for dishes, silverware, supplies, pans, aprons and brooms.

The sewing room is supplied with drawer cases and an exhibit case built in between the ventilating piers. The drawer cases have 24 drawer compartments behind each door. When a sewing class comes to the room the teacher unlocks one of these doors and each pupil takes her drawer out and places it on one of the sewing tables. When the class leaves the room the drawers are again put in the case and the door locked. Thus the room is always ready for the next recitation.

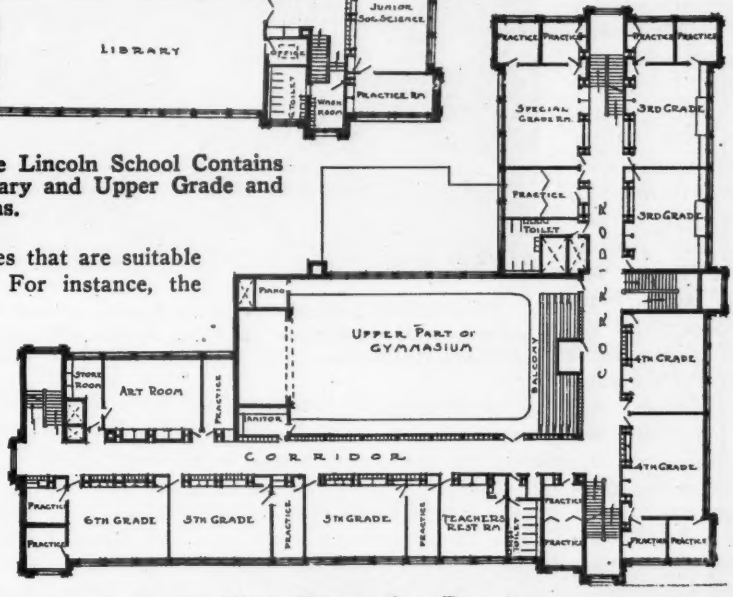
In the agricultural laboratory cases are provided between the ventilating piers for books, pamphlets, grain and soil bins.

The exhibits, propagation room and equipment combine to produce an environment of scientific interest that goes far to make all that is taught in this room very real to both boys and girls. The farmers' organizations, such as the Milk Producers' Association, the Cow Testing Association, and many others, hold their meetings in this room or in the auditorium.

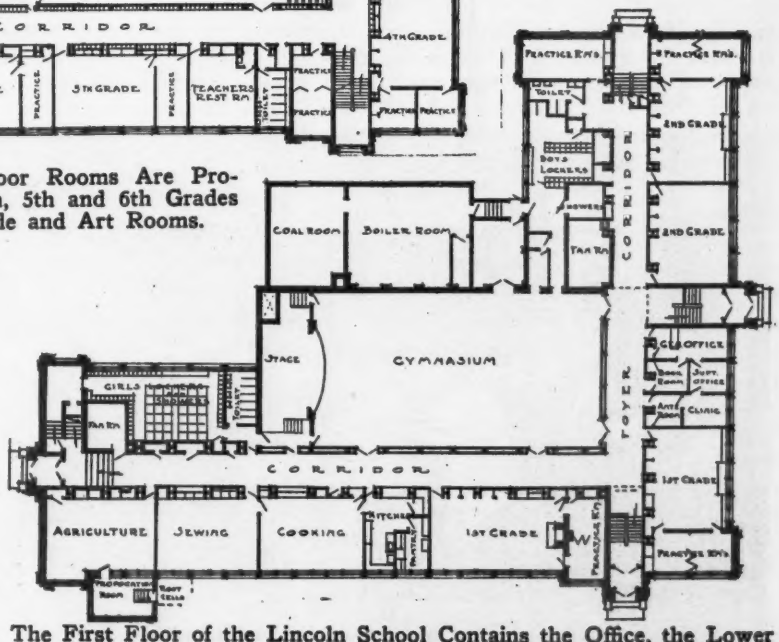
Of special interest is the ventilating system designed to produce higher efficiency in ventilation and greater economy in installation and fuel costs. A small 16-inch square radiator is placed in each fresh air inlet flush with inside class room wall. The steam coils at the fan heat the air for ventilation to 70 degrees. This air is carried by metal ducts to the ventilating radiators which supply enough additional heat to counterbalance the heat losses through the walls and glass in the rooms.

As these radiators are under temperature control and one is placed in each structural unit generally 10 feet apart, the warm air is evenly and thoroughly distributed. Being small and well protected they retain heat for a longer period than if they were adjacent to the cold outside walls. Even if the large fan is not running, flowers and plants can safely be kept in the classroom at all times as the heat from these radiators is sufficient to prevent their freezing.

This method of heating not only prevents excessive heat loss, but also reduces the waste when heating the cold walls every morning. When radiators are placed near the outside walls they occupy the best lighted schoolroom area. When they are set flush with the corridor walls in the fresh air flue, more floor area can be used for instructional purposes.



On the Second Floor Rooms Are Provided for the 3rd, 4th, 5th and 6th Grades and Also Special Grade and Art Rooms.



The First Floor of the Lincoln School Contains the Office, the Lower Grades and Gymnasium, Science Rooms and Boiler Rooms.

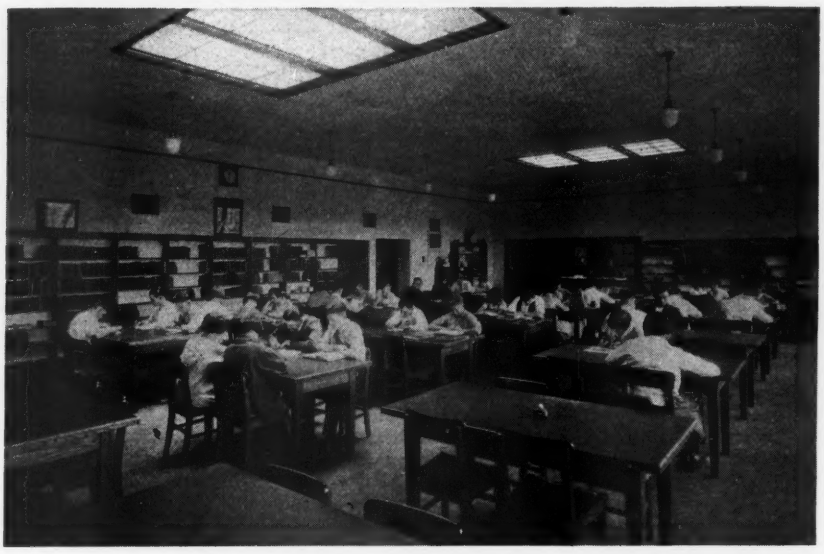
Drawer Cases Are Built Into the Walls of the Domestic Science Room with 24 Drawers, Enough for One Class, Behind Each Locker Door.

Wind conditions have little effect on this heating system.

In this modern environment the rural boy and girl have the privileges afforded by an attractive auditorium and a spacious gymnasium equipped with showers and lockers. Courses in home economics, manual training, agriculture, commerce, physical education, music and drawing give opportunity for a variety of responses unheard of in the one teacher school. A school nurse looks after the child's health, and a school band and orchestra afford instruction in instrumental music.

But this school is not for children alone. It is a whole family affair. The fathers and mothers are as proud of their new educational home as the children themselves, and, being proud of it, they eagerly participate in the various community projects organized by Principal H. A. Tape. The spacious playgrounds and lawns were graded and planted to shrubbery by the farmers themselves. It is a responsible public task to build a school; it is a greater one to reflect in school architecture the trend of modern educational thought and to participate in the erection of a monument to popular education that stimulates the finer impulses and ambitions of the public mind and heart.

E. A. Martini.



The School Library Is Well Equipped and Well Lighted. Note the heating and ventilating registers which eliminate the space obstructing radiators from their usual location under the windows.

The Second Grade Class Room Equipped to Make the School Hours Not Only Instructive but Interesting and Comfortable for the Children.

2nd Mortgage Practice

(*Continued from page 127*)

higher than that of a first mortgage:

1. Cost of Title Examinations 2 to 5 Times That of First Mortgage.

Second mortgages on houses usually are about $1,000 to $2,000 in amount, the highest figure in the present survey being given as $3,000. The average outstanding at any one time on a second mortgage is probably much nearer $1,000 than $2,000.

First mortgages on houses doubtless average nearer $5,000 each than $2,000, and the result is that the cost of examination of title, appraisal of property and check on borrower's status for second mortgages is probably two to five times as much per thousand dollars as the same costs in connection with a first mortgage.

2. Short Term Plan Adds to Cost.

It further appears that second mortgages generally run for comparatively short terms, sixteen cities reporting from one to three years, and twenty cities reporting them as usually running three to six years.

3. Type of Borrower Adds to Risk.

It seems also to be the experience of some second mortgage companies that the applications for loans in proportion to those accepted is extremely large and probably a great deal larger than the proportion of loans applied for to those granted by institutions loaning on first mortgages. That, of course, increases the costs of overhead. There are in general four types of borrowers: (1) the man buying a house for a home; (2) the man buying a house for an investment; (3) the man borrowing money on a house he already owns in order to get money to invest in his business; (4) the man borrowing to buy some commodity such as a player piano or automobile, or to pay some personal liability of indebtedness he has incurred. From the lender's standpoint the risk is usually the least with the first man and the greatest with the fourth man, and it is but fair that rates should increase with risks.

Atomic Hydrogen Welding

This New Process Opens New Fields for Welding Special Alloys, Thin Sheets and Producing Ductile Welds in Iron and Steel

ATOMIC hydrogen welding — the process by means of which hitherto unweldable metals can be melted and fused without the slightest trace of oxidation, and welding can be performed in some cases on metals as thin as the paper on which this is printed—is now made practicable by the use of equipment recently placed on the market. This process, making possible the welding of many special alloys and the production of ductile welds in iron and steel, is the result of research conducted by Dr. Irving Langmuir, of the research laboratory of the company manufacturing this equipment.

In brief, this method utilizes the passage of a stream of hydrogen through the arc between two electrodes. The heat of the arc breaks up the hydrogen molecules into atoms. These combine again a short distance beyond the arc into molecules of the gas, and in so doing liberate an enormous amount of heat, so that more effective welding temperatures can be obtained than with the usual welding methods.

An Operator at Work with the New Atomic Hydrogen Welding Equipment Which Opens Up Entirely New Fields for Electric Welding.

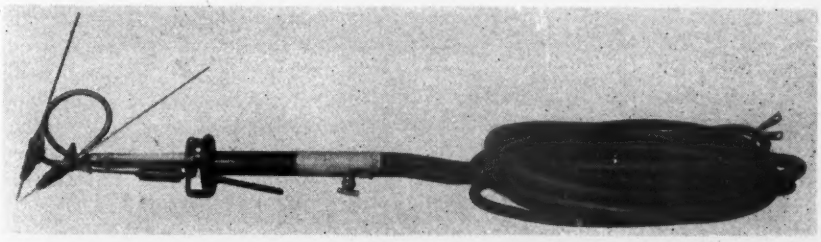
Since atomic hydrogen is a powerful reducing agent, it reduces any oxides which might otherwise form on the surface of the metal. Alloys containing chromium, aluminum, silicon or manganese can thus be welded without fluxes and without surface oxidation.

Thorough trials, extending over a period of many months, were made before introducing the new equipment. The apparatus, as finally designed, represents the result of continued experimentation and research.

The welding outfit consists of the following: (1) a single phase transformer for converting the voltage of a 60-cycle source of power to one suitable for the welding equipment; (2) a specially designed, variable reactor to provide the proper welding current and voltage for different classes of work, and (3) the welding torch by means of which the actual work of welding is performed.

The torch consists of a holder supporting two tungsten wire electrodes, the electric conductors connecting these electrodes to the reactor and the tubing for the hydrogen gas. Each electrode is supported inside a nozzle through which the hydrogen gas is forced out around the electrode. The combination of electrodes and nozzles is set at an angle and the distance between electrodes, or arc length, and also the flow of gas, are readily adjustable.

The electric conductors to and through the torch are heavily insulated and, when welding ceases, the welding circuit is automatically interrupted until such time as the operator is ready to weld again, when the circuit is automatically restored. In contrast to the usual method of electric arc welding, there is no current flowing from the electrodes to the work to be welded. The circuit is completed from one electrode to the other.



A Close-Up View of the Torch Used in the New Atomic Hydrogen Welding Process.

Sample Welds Made with the New Equipment: Left to Right: Aluminum Sheet; the Same Bent; Alloy of Aluminum, Silicon and Manganese; Alloy of Aluminum, Zinc and Manganese.

The new equipment is so far being marketed for operation from 60-cycle, single-phase circuits only, and is recommended for use on ordinary metals of less than ¼ inch in thickness, or on hitherto unweldable metals of greater thickness. Metals having a thickness of but 10 mils can easily be welded and little doubt is expressed that, in some cases, work as thin as 2 mils (about the thickness of ordinary writing paper) can be welded.

Because of the absence of oxides and nitrides from the weld made by this process, it is particularly adaptable to the welding of special alloys so far not weldable by other methods, and also makes a strong, smooth and ductile weld on ordinary iron and steel work. Inasmuch as pure chromium, nickel, copper, aluminum, silver and other metals and their alloys—not to mention iron and the more common metals—can be melted without oxidation, it is expected that new possibilities will be opened in such welding.

DETAILS OF HOME BUILDING

Georgian or Colonial Architecture —Southern Type

By V. L. SHERMAN,
Lewis Institute of Technology

SOMEWHERE, recently there was quite an article on the advantages of whitewashed brick. It does seem as though in our haste we had nearly forgotten the advantages of white. Whitewashed brick may seem "small-town," but it is not. Nor is white paint. The striking contrast between present day building in homes and the old times is shown in the fewer number of white houses. We should have more white paint. Another striking contrast is in the fewer number of porches. The term porch here means porch in the old sense; not a glazed or screened attached room nor a small space allotted in which to back up on opening a screen door.

Both of these items, paint and porch, are nowhere more strongly shown than in the southern Georgian or Colonial home.

The Greek porch is largely the mainspring of that period. What happened to it in its travels by way of Italy, France and England to America is still a matter of discussion. But its revival in white painted wood, in imitation stone and its adjoining chimneys was more than a revival. The style has become a classic style of its own. The effort of Greek architecture was toward lightness, lightness in masculine or feminine lines. Even the ruins of the stone temples show what they accomplished, but it remained for the early Colonials to match and to better that effect.

In Figs. 5, 6 and 8 are shown the porch type of home. Figs. 5 and 8 are in the South. Fig. 6 is in New England. All of them are old and the fact that the one shown in Fig. 6 is in New England tends to show that no Georgian type was limited in its locality. In Fig. 6 the porch covers the entire front of the house. Both stories run well back, with white siding, and with broad windows at nearly regular intervals. The walls are not broken by chimneys and the general effect is pleasing from side or front. This would not be true were the wall colored. The porch wall is of broad flat siding beveled to imitate blocks of stone. The columns are fluted. The capitals, band and roof all conform rigidly to custom except in material, but the shuttered window above adds a Yankee touch. That window, the siding encroaching on the quoins and the chimney somehow Americanize the whole.

In Fig. 5 a balcony or upper porch is built. Balcony is hardly the word to use because the upper floor in such a house disposes of more than sleeping chambers. See what we have come to in these days when we say unconsciously we "are going upstairs to bed." In the old houses the second floor was quite as lively as the first and a porch for the rooms above the main entrance hall was not at all a luxury.

Another tendency of the early days was to include a large portion of the upper floor in the stair hall. This gives the second floor the advantage of openness with privacy. It is easy to see that this Georgian style was well adapted to the southern mode of living. It is not a part with the attached garage or porte-cochere.

This much may be said at least. The southern Georgian, wherever found, is the greatest credit to the early American builders in showing the wonderful opportunities for grace and beauty in wood structure. The result is so like the ancient and yet so different that other material than wood seems inadequate. It needs good white paint and plenty of it.

The design shown in Fig. 7 is not much in use today, although there seems no reason for not making use of it. The porch is quite evident. The sketch is used to point out the fact that with all regard for architectural forms there are many instances of appropriate design which do not come under our own list of patterns. This house was of stone and timber. The stone, as I recall, was whitewashed and the siding rain washed. Frankly, that is not a bad combination so far as colors go. Personally, artificial weathering is preferred.

Fig. 4 is an old home in central Wisconsin. It stands apparently in strange surroundings, but facing a city park on a beautiful river drive. That it is not only not an eyesore but a charming point of departure is a credit to the owners. You need only to pass a few steps from the busy main street to be back in the old timber days of the early settlers. Like many other of the old homes and churches through the state this place survives without blemish. However, it is one of the few which never carried the columned lower porch. Being set close on the old river road it was built with the long balcony.

Considerable space has been spent on the porch of the southern type. If the historical side of architecture were more important, we would find how the Spanish influences and the French influences were felt in particular localities. Much of it came nearly direct from Italy and in the final solution it all spelled sunlight. Now we are back to porches again, and gardens, and gravel walks.

But there is another southern style of the Georgian period. Small homes built compactly of masonry with severe copper or slate roofs and tiny dormers. You will find them as French-Canadian or transplanted French along the Southern coast. The Acadians, perhaps, had something to do with this. This house, to me, looks best of block stone, with large end chimney, and shuttered windows, copper roof, and painted white.

SMALL HOUSES OF MASONRY OF THE GEORGIAN PERIOD IN AMERICA. NOTE LOCALITIES.

FIG. 1. MONTREAL

FIG. 2. ANNAPOLIS.

FIG. 3. QUEBEC

FIG. 4. THE RAILED DECK IS ONE OF THE MOST COMMON ATTACHMENTS SEEN ON THE COLONIAL OF LATER DATE. NO LOWER PORCH IS USED NOR ARE THERE ANY SUPPORTING COLUMNS.

FIG. 5. A COMFORTABLE OPEN BALCONY AND A SCREENED PORCH. A MORE OR LESS HOMELY DESIGN, CONSEQUENTLY MORE TRUE TO TYPE THAN SOME OF ITS COUSINS.

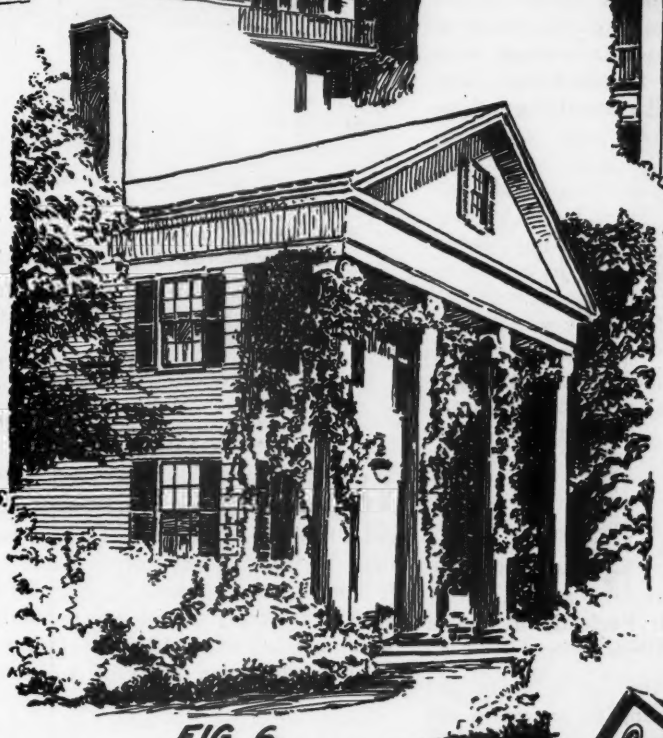


FIG. 6. THE TWO-STOREY FRAME WITH IMITATION STONE FRONT. PROBABLY THE HAPPIEST AND HANDSOMEST OF ALL OF THE COLONIALS.

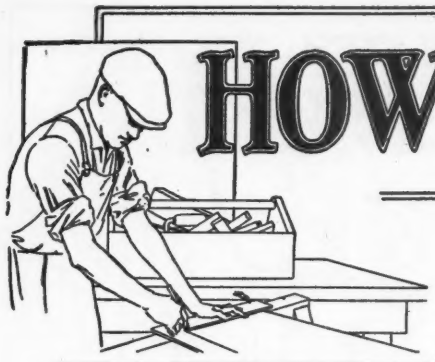
STRANGE AS IT MAY SEEM, A COMBINATION OF THE ROOF LINES IN FIG. 7. AND THE TALL ROUND COLUMNS OF FIGS. 6 AND 8 MAKES A PRESENTABLE SHOWING.

FIG. 7. A TRUE OLD TIMER BUILT IN STONE AND FRAME.

FIG. 8. THE SOUTHERN GEORGIAN IN BRICK. THE COST NEVER EXCEEDED THE BEAUTY IN THOSE PAINSTAKING DAYS.

V. L. Sherman 10-6-27

Illustrating the Characteristics of Southern Type Georgian Architecture.



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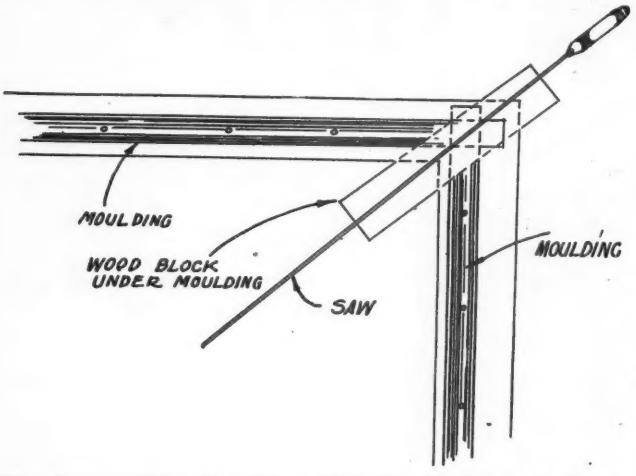
Address Dan-Do-It, care of American Builder 1827 Prairie Avenue, Chicago, Ill.

Mitering Screen Mould

AN easy way of mitering screen mould is illustrated by the sketch. First cut the mould in the proper lengths and nail onto the screen, crossing the pieces at the corners and leaving them loose back far enough from the corners so that the corners can be lifted up. Now place a thin block of wood under the moulding at the



The Screen Wire Moulding Will Fit Perfectly if Cut in This Way and It Saves Time, Too.

corner to protect the screen when the cut is made and saw through the two pieces of moulding as shown in the illustration. When the block is removed the moulding falls into place and fits perfectly. It can then be securely nailed. This is much faster than using a miter box.

M. L. HUNGATE, 911 College Ave., Larned, Kan.

✣

Saving Your Chisels

THE handles of any tool such as a chisel, gouge, or screw driver soon become battered by constant hitting with mallet or hammer. However, by using this simple suggestion all trouble of this kind will be avoided. A common bottle cap, as on pop bottles, is put over the end of the handle as shown in Fig. 1, and then fastened there by small brads as in Fig. 2.

The small projections should be hammered down so as not to cut the hands. These caps can be found in about any size so the size of the handle makes no difference; however, in case no cap large enough can be found the end of the handle can be cut down slightly to fit the cap.

FIGURE 1

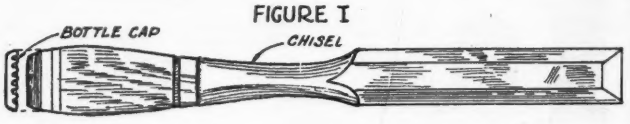
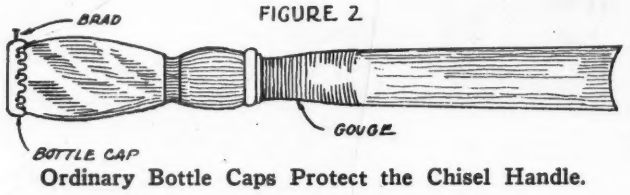


FIGURE 2



Ordinary Bottle Caps Protect the Chisel Handle.

This idea will afford a strong and durable hitting surface which will last indefinitely.

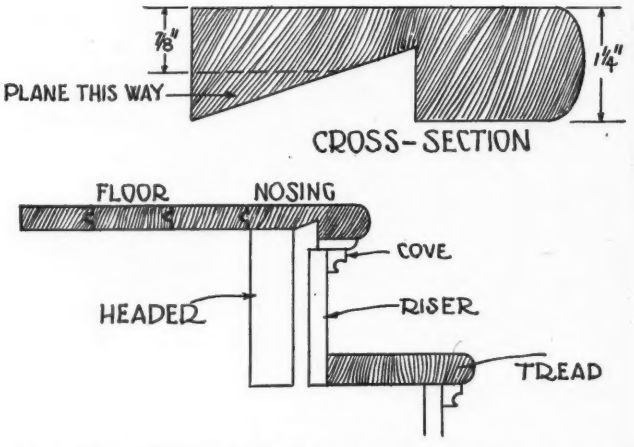
WILSON G. WALTERS, 12 Sibley Place, Rochester, N. Y.

✣

Providing Stair Nosing

HERE is a time-saving kink that I have often used to good advantage. It is sometimes quite a problem to get a nosing for the edge of a stair landing when the proper tools for routing are not available and ready-made nosing is not at hand. Most lumber yards do not carry it in stock. I simply secure a window stool in the particular wood needed and with an ordinary plane cut away part of it as shown in the accompanying sketch.

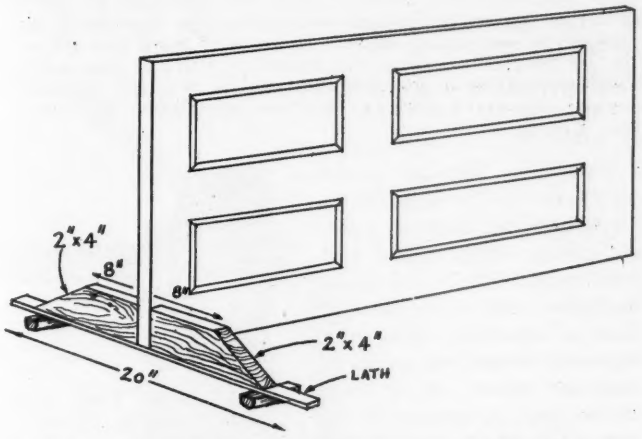
J. JOSEPH ALPINE, South Amboy, N. J.



A Quick Way to Provide Nosing When Ready Cut Nosing Is Not Available.

A Handy Door Jack

IF you want a light, handy and reliable door jack, try the one shown here. Take a piece of lath, or similar thin strip of wood, about 10 or 20 inches long and nail onto it two 2 by 4 blocks, each about 8 inches long, as shown. These should be set just far enough apart so the door will slip between them. Next take a piece of broom



Here Is a Door Jack That Ought to Work Well and Can Be Moved from Place to Place at Will.

stick about 4 inches long, split it in half and nail one-half to each end of the lath near the ends of the 2 by 4 blocks, with the flat side against the lath.

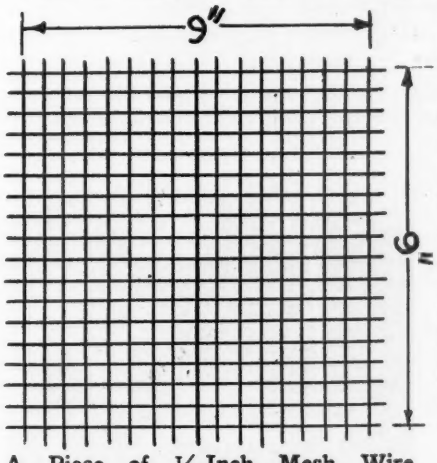
When a door is slipped between the blocks its weight springs the lath down and the door is clamped between the blocks, where it will be held firmly. If the door is raised slightly the clamps will release it. If the blocks are cut smooth they will not mar or scratch the door.

C. A. RUDE, Sanatarium, Cal.

✣

Handy Stucco Scratcher

A VERY satisfactory stucco scratcher, which I always use, is simply a piece of ½-inch mesh wire cloth about 9 inches square. In cutting the wire cloth I am careful to leave the ends just ¼ inch long. With this length they scratch just deep enough but do not scratch through to the lath, which would cause the plaster to flake off.



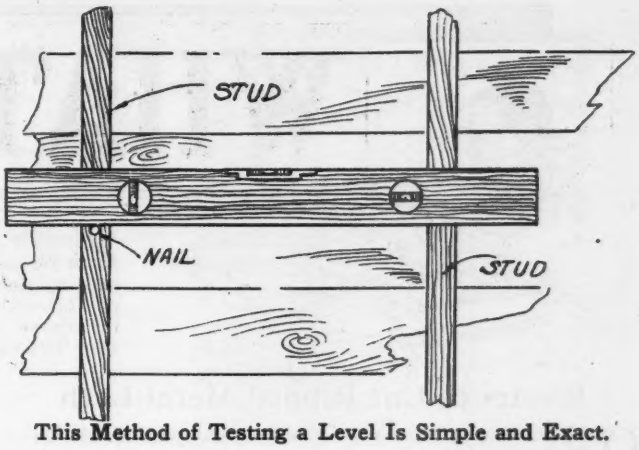
A Piece of ½-Inch Mesh Wire Cloth Makes an Excellent Scratcher for Stucco.

J. H. SEVERIN, Robertsdale, Ala.

✣

Testing the Level

THERE is a much simpler way of testing a level than that described by Mr. Salisbury in the July issue. Drive a nail into a stud or wall, place one end of the level on this, adjust it to the level position and mark the position of the bottom of the other end. Now turn the level end for end and, with the other end on the nail, repeat the leveling and marking. If the two marks are identical the level is correct, but if you get a different mark the second time it is inaccurate. In that case drive a nail exactly half way between the two marks. This nail will be level with



This Method of Testing a Level Is Simple and Exact.

the first nail and the level can be placed on the two nails and adjusted. H. F. HEINKY, Schnecksville, Pa.

✣

Improving Floor Laying Tool

THE idea of using a piece of round steel, in laying floors, which Mr. Gustafson contributed to the June issue, is a good one as far as it goes, but it lacks a cross strip to be used as a handle and to prevent it rolling away or causing a bad fall when stepped on. The handle, attached as shown in the sketch, will speed up the work greatly as a small piece of steel is otherwise hard to handle.

A Short Handle Is a Real Improvement of the Steel Piece Suggested for Laying Flooring.

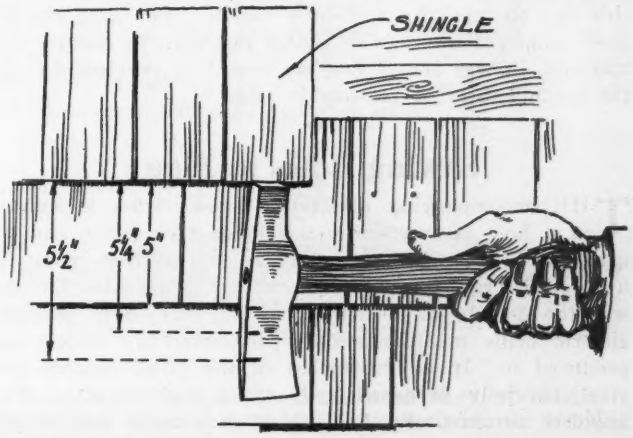
O. H. QUIMBY, 131 N. 79th St., Seattle, Wash.

✣

A Shingling Gage

IN shingling I have found it a great convenience to have my shingling hatchet marked with three file marks. These are 5 inches, 5¼ inches and 5½ inches from the head. They mark the exposures that I find I use most, but the spacing may be changed to suit individual requirements. With the hatched marked in this way much time is saved.

JOSEPH W. DINEEN, 133 Avenue C, Rochester, N. Y



Marks on the Shingling Hatchet Give the Right Exposure.

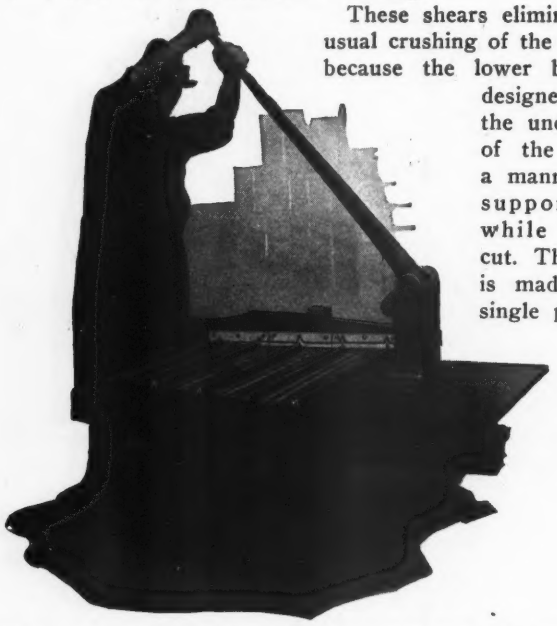
WHAT'S NEW ?

EDITOR'S NOTE: *The* AMERICAN BUILDER *does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address* AMERICAN BUILDER *Information Exchange, 1827 Prairie Ave., Chicago.*

Shears to Cut Ribbed Metal Lath

ONE leading company has developed specially designed shears to be used in cutting its ribbed metal lath. With these shears one man can easily cut this ¾-inch lath to any desired length without crushing the ribs or injuring them in any way. The blades of the shears are mounted on a 12 by 40-inch base of cast iron. The entire machine weighs 400 pounds and may be placed on skids or trucks for convenience in moving.

These shears eliminate the usual crushing of the lath rib because the lower blade is designed to fit the under side of the rib in a manner that supports it while being cut. This blade is made of a single piece of hardened steel, is 27 inches long and has five solid ¾-inch ribs spaced 6 inches apart to fit the ribs of the lath. The upper or moving blade is made in three sections, each 9 inches long. It is made in this way so it can be removed easily for sharpening. These sections are bolted to a movable bar operated by a 46-inch handle. The long handle gives sufficient leverage to enable one man to operate the machine. These shears may be rented or purchased from the manufacturer at reasonable rates.



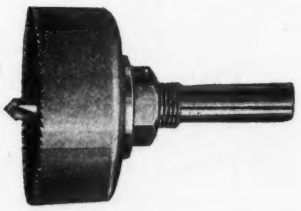
These Specially Designed Shears Will Cut Ribbed, Metal Lath Without Crushing of the Rib.

✣

Sawing Holes in Pipe

THE accompanying illustration shows what is known as a hole saw, a newly developed tool which can be used for cutting clean round holes in cast iron, wrought iron, steel, brass, copper or wood. It is designed for use with the ½-inch and ⅝-inch special and heavy duty, portable electric drills manufactured by the company which has produced it. It is constructed of the finest quality saw steel, carefully hardened and strong and durable. The mandrel automatically holds a ¼-inch twist drill which drills the pilot hole to serve as guide for the saw.

This saw will be found particularly valuable in plumbing and heating work, for cutting holes in iron and steel, such as tanks, coil pipes, bathtubs, sinks and radiators and in numerous other uses applying to building construction and repair. It is made in two sets, an automobile set and a plumber's and steamfitter's set. The latter consists of five hole saws and two mandrels and is reasonably priced.



This New Tool Saws Round Holes in Wood or Metal.

✣

New Portable Saw Rig

A NEWLY designed portable saw rig for the contractor has recently been placed on the market which features easier handling, greater production, more widely varied use and safer operation. The tilting table makes possible a great variety of use for such a machine. In addition the saw travels in a straight line, providing the same cutting depth for the entire length of the stroke which greatly increases the cutting capacity.

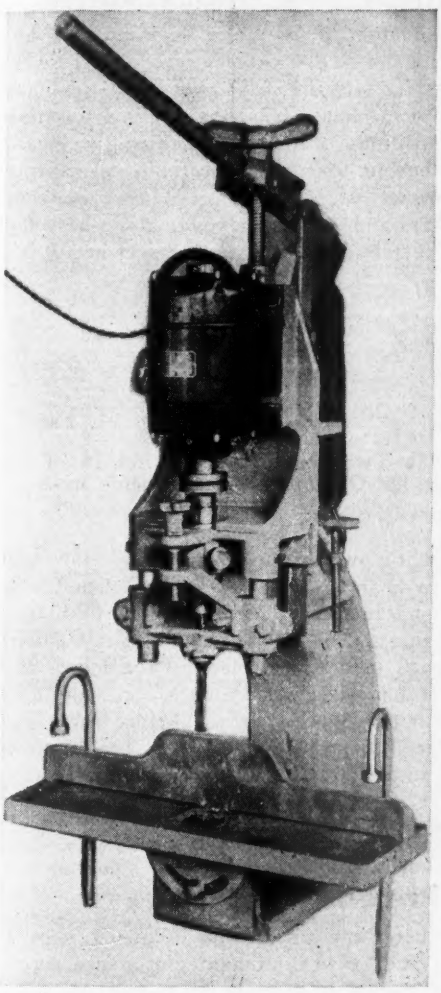
This rig is powered with an eight horsepower, two-cylinder gas engine, mounted under the table, where it is fully protected. This construction also makes a close, compact design and requires less floor space. The cut under frame permits the operator to stand in a natural position while using the machine and the saws are fully protected. The ripping saw is continually guarded, this feature working automatically.

Over a year of development work has been put into this rig and a number of the machines have been put through severe and extensive service tests on actual building jobs. In every case, it is stated, they have proven the claim to being a superior product.

More Widely Varied Use and Safer Operation Are the Features of This Saw Rig.

New Type Mortiser

A HOLLOW chisel mortiser of a different type has been placed on the market and is illustrated here. This machine is 40 inches high and is so designed that it can be put on any work bench or can be mounted on a small wooden truck with casters and pushed around the shop. The main frame is cast in one piece and is very rigid. Power is supplied by a ½ horsepower, universal, ball-bearing motor mounted on the spindle and this motor is operated from an ordinary lamp socket.



Here Is a Mortiser Designed to Be Either Mounted on a Bench or on a Truck with Casters to Move About the Shop.

The drive is by means of a belt and gears and short coupled belts have been entirely avoided, resulting in smooth, quiet operation and permitting accurate and perfect work. This machine has a capacity of hollow chisels up to ¾ inch in soft wood and ⅝ inch in hardwoods. If the square chisel is removed and only the regular boring bit used, this mortiser makes a most effective boring machine. After the bit and chisel are placed in the machine a small handwheel provides accurate and easy adjustment of the cutting ends of the bit and chisel.

The length of the table is 24 inches and it tilts to an angle of 45 degrees either way. It has a vertical adjustment of 10 inches and a horizontal adjustment of four inches. The distance from the end of the chisel to the table is 13 inches, the hole in the spindle for boring bits is ½ inch and the vertical travel of the chisel is 4 inches.

✣

Easily Concealed Wall Safe

HERE is a strongly built, compact wall safe, designed for installation anywhere in the home or apartment and so constructed that it lies perfectly flush with the wall. It consists of a deep, heavy, seamless casting, large enough to take legal size papers, a strong cast door of reinforced concrete, equipped with a brass lock which is flush with the face, doing away with any knob or projection. The door swings on concealed hinges and is so designed that it cannot be "jimmied" or pried open.

The concrete face of the door is so constructed as to permit finishing to match any wall in which it is set. When installed the safe becomes practically invisible and may be papered over, the small keyhole being the only visible part. This safe is entirely moisture-proot and as nearly burglar proof as it is possible to make any safe, it is said, and when installed in the cellar wall or bricked in, in an upper room, it is fireproof. It is not only safe but is accessible at all times, simple and economical.

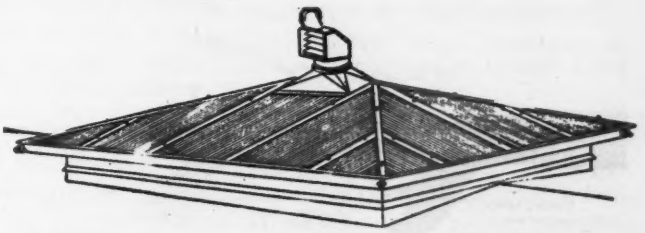
This Safe Can Be Installed in Any Wall and Covered with the Paper or Other Wall Finish so that Nothing but the Keyhole Remains Visible.

✣

Easily Installed Skylight

THE skylight shown is described as a mechanically constructed skylight that costs no more than an ordinary soldered skylight and is simple and easy to install. No mechanic is required for the installing as there is nothing to cut or fit. The base and extension are made from one piece, with laps extending upward, preventing leakage at all joints. All extending laps on the base slip in between bars and are bolted at the ends and sides, making the base sections solid.

Condensation or water entering the base gutter forces all its contents to the lower edge where an opening is provided for the water to escape onto the roof. Where there is more than one ridge bar fastened to the hip a binder is provided which binds both sides of bars and ridge bars together, preventing the bars from spreading apart when under heavy strain such as ice or snow.



Here Is a Mechanically Constructed Skylight Which Is Easily and Quickly Installed Because There Is Nothing to Be Cut or Fitted.

Automatic Fire Detection

EVERY year there is a tremendous loss of property and life through fires, but if these fires were automatically detected at the start there would be few conflagrations for, with the rare exception of fires following explosions, all fires are small at the start and easily extinguished before they have done great harm. It can now be made possible to detect fires at their start, there need be no delayed alarm in the home, place of business, store, church, hospital or school when fire starts.

The Home Fire Detection System Control Box Is Small, Neat and Inconspicuous.

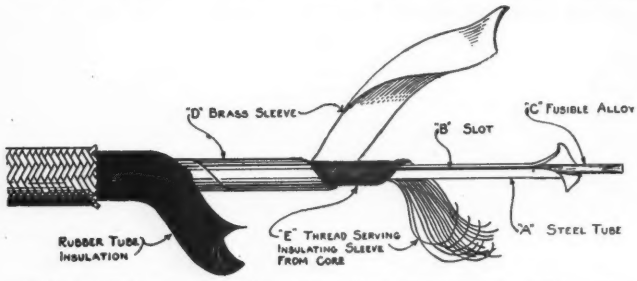
You can now put the task of detecting and reporting fires upon a chemical-electrical device that has no nerves and always does the job thoroughly, accurately and promptly. The heart of this device is an automatic, continuous, thermostatic wire, the construction of which is shown in one of the illustrations. This wire is absolutely water and moisture proof. When fire, or increased heat which creates a "fire condition," occurs the fusible alloy core of this wire fuses and expands, through the slot of the steel tub and the thread serving, to the brass sleeve, forming a short and ringing the alarm gong.

There is a very small amount of current flowing over the wires, including the fire-detecting wire, at all times, a continuous circuit principle. This small "trickle current" is insufficient to itself cause a fire. If any of the wiring is broken or cut or the flow of this trickle current interrupted in any way, the system is so arranged that a small trouble bell, distinct from the alarm gong, will ring.

All these systems have double battery supervison. Complete failure of the main battery or a drop in its voltage below the requirements gives the trouble signal. The trouble battery is also under supervision. Should it fall or fail in voltage another trouble signal is given.

These systems may, at the time of installation or at a later time, be so connected as to register signals at a remote point. Each fire-detecting circuit may be equipped with one or more break glass manual boxes. This provides the means for turning a manual alarm, for tests or fire drills. The system may also be arranged to operate emergency lights which are lighted as soon as the detecting wire fuses, and to drain tanks containing inflammable or explosive liquids and to close fire doors.

Every system is individually tested not only by the manufacturers' inspectors but also by a representative of the National Board of Fire Underwriters and each control panel, before shipment, must bear the label of the Underwriters' Laboratories.



The Heart of the Fire Detecting System Is This Fire Detecting Wire with a Core of Fusible Alloy Sensitive to "Fire Conditions."

These fire-detecting systems are designed to meet every need and requirement, from the smallest bungalow to the largest industrial plant or group of civic buildings. The company's engineering staff is available to make fire hazard surveys and recommendations for automatic fire-detection equipment.

✣

New Combination Sliding Rule

HERE is a combination of two rules in one, a new and simple measuring device that will eliminate all guesswork in obtaining dimensions and insure accuracy. It is obtainable for all classes of mechanics who are required to obtain measurements in positions or places which are awkward. It is of particular benefit to engineers, architects, contractors, carpenters, inspectors, estimators, plumbers, steamfitters, awning makers and glaziers. It is made in both feet and inches and in meters in sizes of 2 to 8 feet and 1, 1½ and 2 meters.

A Rule Which Is Two Rules in One and Is of the Greatest Assistance for Obtaining Measurements in Awkward Positions.

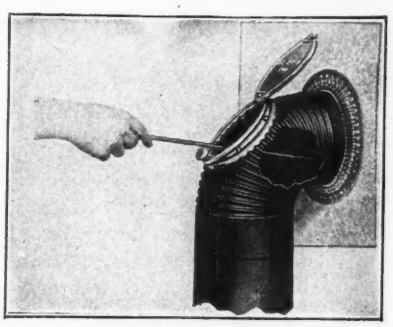
This rule is used for outside measuring only. One side is marked from 1 to 11 inches in black figures, then 1 F in red; the second foot is marked the same as the first, from 1 to 11 in black figures, then 2 F in red. Beginning with the second foot, each inch is preceded by the figure 1 in red, denoting 1 foot 1 inch, 1 foot 2 inches, etc. The third foot is marked with the figure 2 in red before each inch, denoting 2 feet 1 inch, 2 feet 2 inches, etc. The figure in red preceding the inch mark denoting the number of feet in each case. The other side of the rule is marked in consecutive inches.

✣

To Prevent Sooty Flues

NO longer is there any excuse for allowing soot to accumulate in flues, says the manufacturer of a certain new device. This device is a neat, tight door placed in the flue elbow which can be opened, allowing the soot to be raked down into the soot pit of the stove. This cleaning is so easy and simple that it can be done frequently and the flue kept always free from soot. It is not a dirty, unpleasant job as it was without this device.

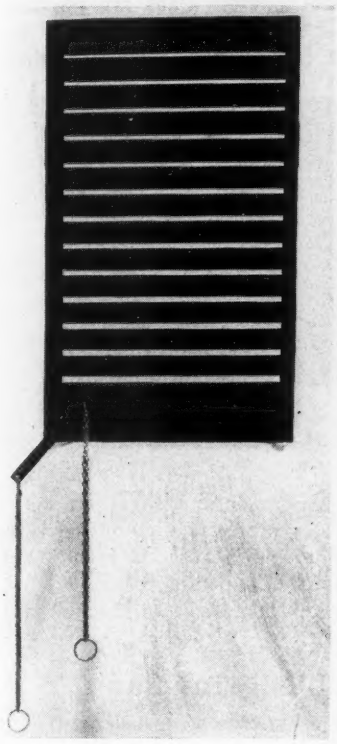
Sooted flues are the cause of many fires, not to mention unsatisfactory heating, spoiled baking from unreliable fires, soiled walls after rains, smoked up wall paper, stove and furnace explositions and wasted fuel. With this device all these may be eliminated and the fuel and other economies should more than pay for it in a short time. Straight joints as well as elbows can also be furnished in standard sizes equipped with the device.



With This Flue Device Clean Flues Are Always Easily Assured, Eliminating the Cause of Many Fires.

For Ventilating Gables

AFTER considerable investigation and development work on the part of the manufacturers, a new article has been produced and is now ready for distribution to people who desire to have ventilation through the gable ends of their homes and also through garages, storage closets, cellars and similar parts of buildings. This device is a patented article. It is in the nature of a louvre made of heavy gauge, cold rolled steel, capable of rendering a lifetime of service without getting out of order.



This Gable Ventilator Excludes Rain and Snow But Admits the Air Freely.

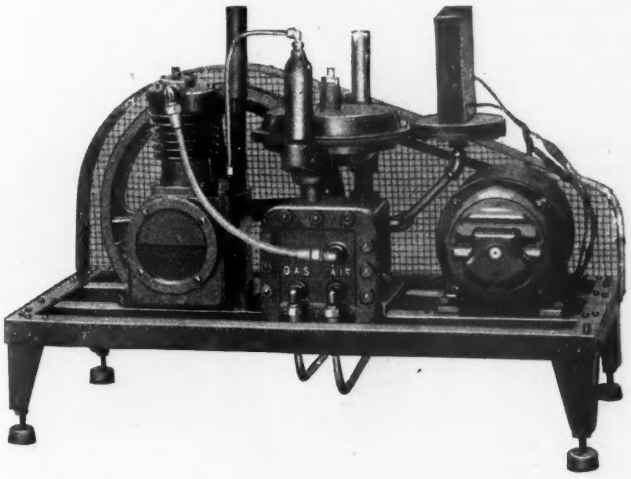
It is weatherproof, that is, while it permits plenty of light and air to enter, the louvres are so constructed as not to permit the entrance of snow, rain or wind.

This device may be installed in any type of construction by the regular workmen and, as it is said it cannot get out of order, it should last indefinitely and be worth all it costs.

✣

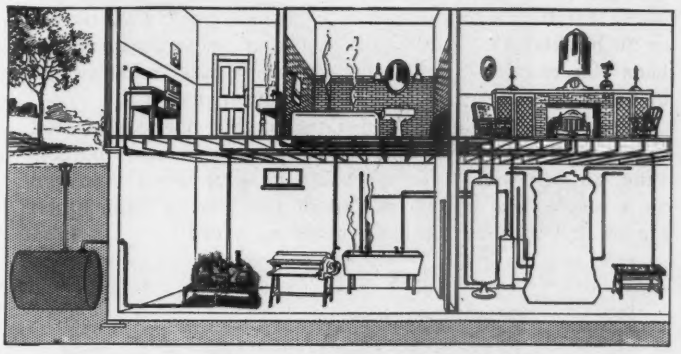
A Home Gas Plant

OUT on the farm or in the small towns and cities, where gas from central gas plants is not available, it is now possible to have a thoroughly dependable gas supply for the kitchen range, the hot water heater, the laundry hot plate or the auxiliary heater—in fact, for all the purposes for which fuel gas serves. The equipment which makes this possible, and brings comfort and convenience to the more isolated homes, is a new, modern application of an old and tried process. It is a private gas plant, generating fuel on the premises in a way that is absolutely safe and foolproof, it is said, and at an economical cost.



A Gas Generating Plant That Is a Compact and Economical Piece of Home Equipment and Designed for Absolute Safety of Operation.

The illustration shows a typical household installation. The machine forces air through the high test gasoline stored underground outside the building. The compressed air absorbs gas from the gasoline and builds up a pressure in the top half of the storage tank. The gas generated in this way is piped from the tank, through the machine, where a governor reduces the tank pressure to a pressure suitable for proper combustion at the burner, and thence to the various burners.



This Home Gas Plant Will Supply Every Requirement of the Modern Home Without Affecting the Fire Insurance Risk.

In designing this system the manufacturers have considered safety equally with economy and reliability. For example, gasoline from the storage tank cannot enter the building in which the machine is installed. Should the control switch fail to function at any time a mercury safety seal blows, releasing the gas harmlessly to the outside air. When the excess pressure is reduced the mercury returns automatically and the normal operation is resumed. The installation of this plant in no way affects the premises as an insurance risk, it is stated.

✣

All Steel Wheelbarrows

THE demand for stronger, longer lived wheelbarrows and trucks is the influence which has brought about the manufacture of a line of barrows one model of which is illustrated here. The unusual strength of these wheelbarrows is accomplished through their all-steel construction, the correct placing of braces to secure maximum strength with the least weight and proper balance and the strong frame construction.

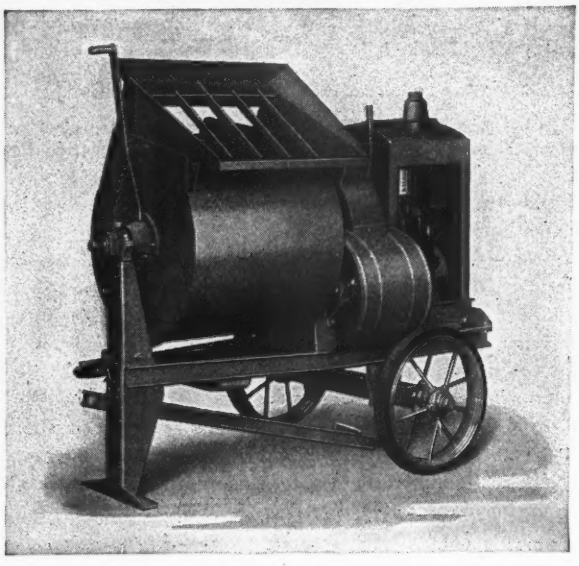
This Wheelbarrow Was Developed to Meet a Demand for Stronger, Longer Lived Barrows.

These wheelbarrows are made in eight different styles for various purposes and are described as the garden barrow, general purpose barrow, contractors' barrow—general purpose, mortar and concrete barrow, concrete barrow—deep tray, fireproofers' barrow, brick barrow and tile barrow.

One Bag Mortar Mixer

A NEW one-bag mortar and plaster mixer with special features of speed, portability and long wear has been announced as an addition to a leading line of concrete-making machinery. Test machines have been undergoing workouts in the field for some time past and have indicated that the new mixer, in the hands of a single operator, will easily handle the requirements of from 12 to 14 plasterers or 50 bricklayers. In some instances a single operator has been able to handle the mixing and carry plaster for a crew of five fast plasterers without any additional help.

The machine will turn out a thoroughly mixed, four-hod batch of any kind of mortar or plaster in two minutes time, an extremely even workable mixture being produced as a result of a special design of the mixing hopper and blades and a 24-revolution-per-minute speed.



This One Bag Mixer, with a Single Operator, Has in Actual Use Served 12 to 14 Plasterers or 50 Bricklayers.

Two styles of mounting are provided. On the two-wheeled trailer mounting, equipped with a telescoping steel hauling hitch, careful attention has been paid to balancing, so that it can be handled easily behind a truck or in confined quarters, the wheels being equipped with solid rubber tires, cushion springs and roller bearings.

For inside work, when speedy portability is not a factor, a steel caster mounting is provided. Since this permits the mixer to pass easily through narrow halls, or a 36-inch door, the mixer may be moved from room to room as the job progresses. This style is also equipped with the telescopic hauling hitch. The casters are interchangeable with the trailer mounting and only a few minutes are required to make the change.

A completely enclosed, two-cylinder, hopper-cooled gasoline engine is provided as standard equipment, but an electric motor drive is optional if desired.

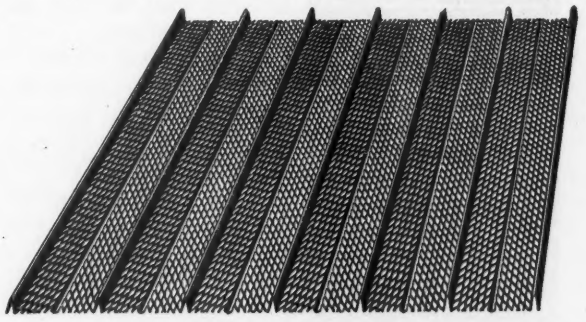
✣

New Reinforcing Lath

HERE is a new type U-rib, expanded metal, used as a combined centering and reinforcement for concrete construction, in which has been incorporated several valuable new features. The parallel, cold-drawn, ¾-inch deep, U-shaped ribs are spaced 4 8/10 inches center to center and connected by sections of expanded steel mesh. These sections consist of two panels each composed of six rows of diamonds with a ⅛-inch bead or secondary stiffening rib through the center. Ribs, mesh and beads are all formed from a single sheet of steel.

By reason of its design this lath combines the stiffness necessary for rapid erection with the excellent bonding qualities which are essential. The connecting sections of uniform diamond mesh provide the key while the small size of the openings prevents undue seepage of concrete.

This lath is highly satisfactory for centering and reinforcing roofs, floors, walls, tanks, culverts and other forms of construction in which thin concrete slabs are required. It is also an efficient, combined lath and furring for various types of plaster work, partitions, ceilings, etc., where



Here Is a Ribbed, Expanded Metal Lath Designed for Centering and Reinforcing Concrete Floors, Roofs and Similar Construction.

wide spacing is desirable. It is made in a sheet seven ribs or six sections wide. The size of the diamonds in the connecting mesh is ⅜ by 15/16 inch. It is cut from standard sheet and painted black. Copper bearing lath, cut from copper bearing sheet and painted red, is also furnished on special order.

✣

Better Portable Swing Saw

THIS portable swing saw cross cuts, rips, dados, grooves, mitres, joints and rabbets. It is described by the manufacturer as the climax of a policy of always keeping ahead. It will save time by speeding up the work of cutting studs, joists, headers, trimmers, bridging, rafters, sheathing, bracing, floor and roof boards, sills and girders and enables the better and faster fitting of doors, windows and frames as well as many other uses for which it replaces the hand saw.

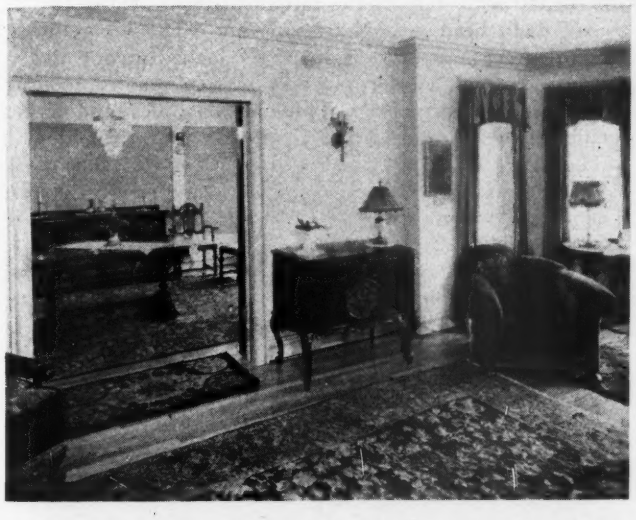
The table is 27 by 33 inches and the height from floor to table top is 31 inches. Ten-inch, 16-gauge cross cut and rip saws are furnished, also a cross cut guide drilled for attaching wooden stops and a ripping fence. The 1 horsepower motor operates at 1,750 revolutions per minute and on 110-220 volt alternating current. Equipment includes 25 feet of heavy drop cord and electric switch. It may be plugged into any light circuit and is easily portable from job to job on the bumper of an automobile. It is also furnished with a countershaft for belt drive if desired.

The Latest Improved Saw of This Type Made by a Firm Specializing in Such Machinery.

Washable Wall Covering

IN the past it has been possible to laundry the draperies and clean the woodwork and furniture, but the walls of a room could only be left to collect dirt and fade until they had to be replaced. Now it is possible to obtain wall coverings which can be cleaned easily and quickly and will permanently retain their beauty.

The walls of the room shown in the illustration are covered with an oiled fabric which lends itself to a variety of decoration. This cloth is made in both glazed and dull finishes. The glazed finishes, in printed patterns, are most frequently used for bathrooms and kitchens. The dull finish may be used plain or in tinted colors or may be used as a base for paint coats. This fabric is built to last indefinitely. Only the best materials and pigments are used in its manufacture and the colors are fast. The surface does not scratch easily and the walls continue, in spite of repeated cleaning, to look like new until it is wished to change them by the application of a new covering or by painting over.



This Wall Covering Material Offers an Infinite Variety of Decorative Possibilities and Can Be Readily Washed When Soiled.

When this material is applied to the walls it hides the cracks in old plaster. It helps to prevent cracks in new plaster and hides them if they do occur. Though the first cost of this material is somewhat higher than for paper, its lasting qualities, it is said, make it inexpensive in the long run. It also makes possible an inexpensive change in decoration to harmonize with a change in furniture or decorative scheme. This is accomplished by painting. It can be hung easily on any flat surface which is perfectly dry and smooth and is handled in much the same manner as paper.

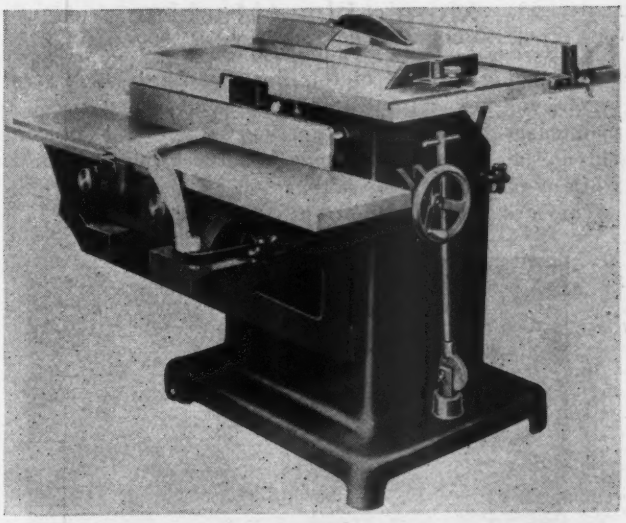
✣

Combination Saw and Jointer

THIS new combination, universal saw and 8-inch jointer, motor on arbor type, is made up by combining the standard motor on arbor saw and 8-inch jointer units of this manufacturer of high-grade machinery. It is equipped with a 30 by 34-inch saw table properly machined and fitted with removable throat plate to allow for the use of a dado head, grooving saws, etc., and tilts to 45 degrees, locking at any desired position. A dial indicates the exact position.

Cross cut and ripping gauges are standard equipment and may be used on either side of the saw. A 12-inch saw, mounted on the motor arbor, affords the most efficient possible drive. The saw may be raised and lowered from flush with the table to high enough to cut 2½-inch stock and is carefully guarded at all times.

The jointer is 44 inches over-all with 24-inch front table and 18-inch rear table. Vertical adjustment of the front table and rabbetting groove in the rear table make it possible to cut rabbets up to ½ inch deep. Stock up to 8 inches wide may be handled. The jointer is equipped with a three knife safety cylinder properly guarded at all times. The fence may be set at any desired position on the front table.



Here Is a Combination Saw and Jointer Made Up of the Standard Units Manufactured by a Leading Company in This Field.

In changing from saw to jointer operation all that is necessary is to drop the saw to its lowest position and move a slip collar so as to engage either the saw or the jointer, whichever unit is desired.

A special lamp socket motor or one horsepower motor to operate from a power line are standard equipment, but a 3 horsepower motor may be furnished when desired for heavier work. These machines are available for use with 50 or 60 cycle, single, two or three phase, alternating or direct current.

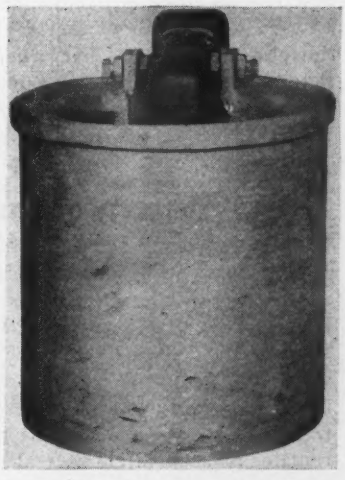
✣

An Electric Melting Pot

A NEW electric melting pot has been introduced for melting solder, babbitt, tin, etc., which has a capacity of from 27 to 40 pounds, according to the metal to be melted. This pot may be operated on either 110 or 220-volt alternating or direct current circuits and is made in two ratings, 750 and 1,000 watts.

This pot consists of a durable sheet steel cylindrical casing, 10 inches deep and 9 inches in diameter, in which is supported a cast iron crucible four inches deep and six inches in diameter inside. The space between the crucible is efficiently insulated with a compact heat insulator. Heating units are of the cast-in, sheath-wire type so successfully applied to metal melting. One unit is used in each pot, dissipating 750 watts in one rating and 1,000 watts in the other.

This pot is designed for melting lead, babbitt, tin, solder and similar alloys or metals, except spelter or zinc, at temperatures not exceeding 950 degrees Fahrenheit.

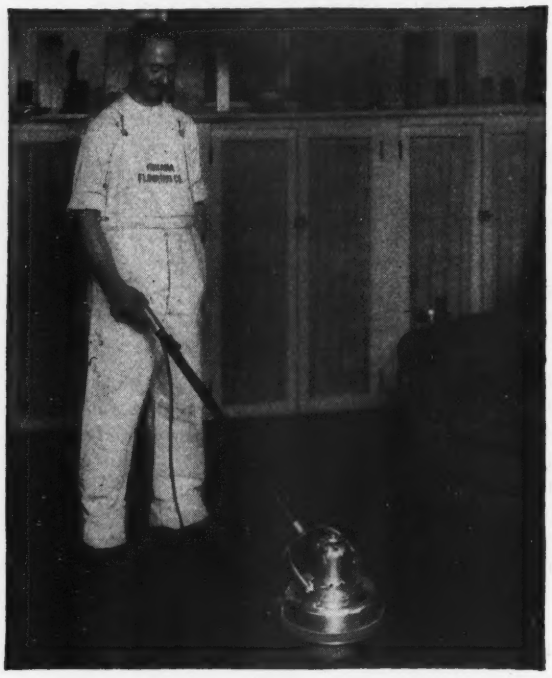


An Electric Melting Pot for Solder, Lead, Tin, Babbitt and Similar Alloys.

Simple Floor Machine

DURABILITY and simplicity of design are the outstanding features of this floor machine which scrubs, waxes, polishes and buffs, eliminating all hand labor in the maintenance and refinishing of floors. It will also remove old finishes with either sand paper or mineral wool and will automatically apply a thin even coat of wax.

The principal variation, in this machine, from other similar devices is that it revolves both clock-wise and counter clock-wise at the same time and is equipped to hold three brushes or blocks instead of one. This counteracts the heavy pull found in many machines having only one brush and produces a maximum ease of operation.



Here Is a Simple Electric Floor Machine That Scrubs, Waxes, Polishes, Buffs or Removes Old Floor Finishes.

In waxing, cans of liquid wax are inserted in the waxing brushes. These cans have two small holes at the bottom from which the wax flows as soon as the machine is put in operation. Standard equipment includes a set each of the waxing brushes, scrubbing brushes, polishing brushes and buffers and three cans of wax.

The machine is equipped with a universal motor for alternating or direct current. A safety switch stops the machine as soon as the handle is released. Rollers permit ease in moving about and a catch holds the handle in an upright position so that when stored away the machine takes up only the same amount of space as a small vacuum cleaner. Oiling has been eliminated by the packing of all moving parts in grease.

✣

Waterproofing for Plaster

NOW comes a new product which combines in one application a wall size, a wall waterproofer, a preventive of discoloration, a time-saver on all plaster work. Before offering this material to the public the manufacturers subjected it to severe tests. It was applied on walls from which the paint and paper had peeled off because of dampness. In every one of these instances the walls were redecorated in 24 hours after this size was applied and remain perfect after several years, though prior to the use of this size the decorations had discolored in from a few days to a few weeks.

This material is applied with a brush just as it comes from the can and one gallon will cover about 800 square feet. It penetrates the plaster and seals the surface, drying over night in a warm, well-ventilated room, and makes a perfect foundation on which to apply either paint or wallpaper without the application of other size or primer.

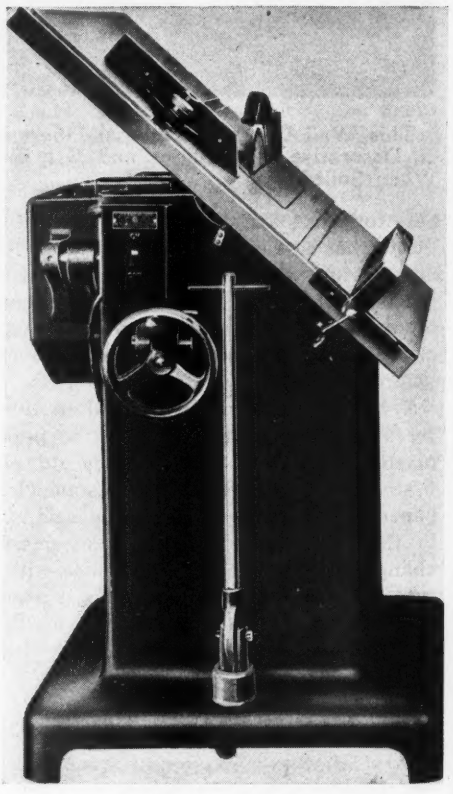
✣

An Improved Woodworker

WOODWORKING machines to operate from lighting current have become very popular and have improved steadily. One of the latest improved machines is the motor on arbor machine shown here. In it, it has been possible to eliminate all gears and belts and provide a direct drive. It is equipped with a 30 by 40-inch table properly machined and fitted with removable throat plate to allow for the use of dado head, grooving saws, etc. The table tilts up to 45 degrees and may be instantly locked at any desired setting. A dial with graduations and a pointer indicates the exact position of the table at all times and a stop facilitates quick and accurate return to horizontal.

The cross-cut gauge can be used on either side of the saw and can be quickly set at any angle and rigidly clamped. The ripping gauge can also be used on either side of the saw and tightening the lever-head screw locks it in position and automatically lines it up with the saw. A saw guard protects the operator at all times and a splitter guard is also a part of the safety-first equipment.

The machine is equipped with a special motor with oversize bearings and with the shaft extended to carry suitable saws. The saw may be raised and lowered from flush to high enough for 2½-inch stock. The pedestal is a heavy, one-piece casting with two pulleys at the back and two stationary feet at the front. To move the machine, a handle is pulled forward raising the feet and bringing the weight onto a third roller on a swivel bearing. This machine is suitable for very fine work, but is also capable of rapid production.



This Motor on Arbor Machine, Operating from the Lighting Circuit, Incorporates Many Improvements.

✣

Correcting an Error

AN error was made in the October advertisement of the Safe Tool Mfg. Co., of Bridgeport, Pa., which appeared on page 253 of AMERICAN BUILDER. The size of the metal table of this company's saw was given as 14 by 7 inches, making it appear in the class of a toy rather than a full size woodworking machine. The size of the table of this saw is actually 14 inches by 17 inches.

Artistic Lavatory Designs

IN the past the utilitarian purposes of the lavatory and the material of which it is made, vitreous china, have always imposed severe limitations upon its design. The difficulties of firing large art designs of genuine vitreous china, in one piece, have been overcome, however, and this material is now being used with all the artistry of the wood carver.

In the new lavatory designs, of which the one pictured is typical, utility is combined with beauty. Just as furniture in authentic period designs, in other rooms of the home, evokes a feeling of unusual charm, so these new lavatory designs bring a new and most welcome distinction to the bathroom. They are, in fact, fine pieces of furniture modeled in genuine vitreous china of endless durability. They inaugurate a new period in lavatory design.

Artistically Designed Lavatories and Other Bathroom Fixtures of Vitreous China Are Now Available.

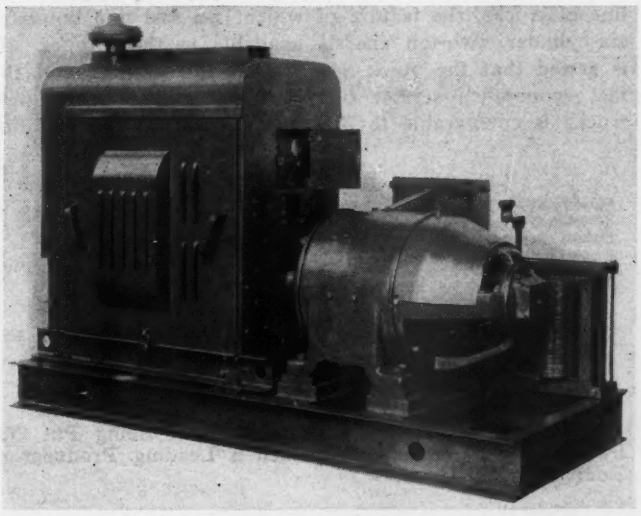
The distinctiveness of the fittings is in keeping with the beauty of the lavatories and the original designs have been hand wrought with infinite care. To give the whole bathroom decorative scheme unity, fittings for bath, shower and closet are made in the same designs. The all-over design of hand hammered metal, in old gold or green gold, harmonizes agreeably with tile in soft neutral tones, with light fixture shades, draperies, curtains and towels.

Gas Engine Driven Welder

THIS new, small, gas engine driven, electric welding outfit incorporates a welding generator with a continuous rating of 150 amperes and a one-hour rating of 200 amperes, the current ranging from 50 to 250 amperes. It is driven by a power unit rated at 18.22 horsepower S. A. E. and capable of developing 23.5 horsepower at 1,400 r.p.m. The generator is equipped with a control panel, rheostat and self-adjusting, stabilizing reactor.

The engine accessories include a strongly constructed radiator, pressure feed lubricating system with oil pressure gauge and indicator, vertical tube gravity feed carburetor, air cleaner, centrifugal governor, starting crank, 10-gallon gasoline tank, tool box and sheet metal hood with sheet metal side panels which can be locked in place.

This outfit is particularly adapted to field work and shop and garage work where portability is desirable or for any application where no power supply is available for driving a motor generator type of welder. Among its advantages are low first cost, light weight and reliability. Tests have shown the outfit capable of standing up under hard service and overloads. The set is mounted complete in a structural steel base so designed as to facilitate easy moving from place to place.



Here Is a Gas Engine Driven Welder Which Is Light and Easily Portable and of Rugged Construction.

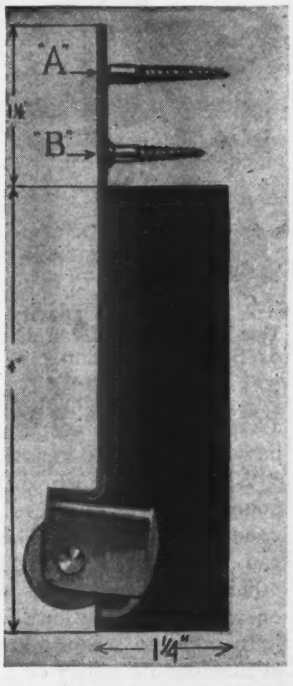
Spring Sash Sustainers

WEIGHTS, pulleys and cords are no longer necessary for sliding sash windows if the sustainer shown in the accompanying illustration is used in their place. Two of these sustainers will hold one sash weighing not more than 18 pounds—if the two sash are of light weight, only two sustainers are required, one on the right of the lower sash and one on the left of the upper sash.

These sustainers consist of a spring of specially tempered spring steel, roller of cold rolled steel and pivots of bronze. With the exception of the bronze pivots, the entire fixture is thoroughly electro galvanized. The cost of this device is placed at about one-half to two-thirds the cost of ordinary double hung window equipment and the labor of installing is only one-half that for the ordinary equipment. Because of the small weight and bulk, the cost of handling and storage is greatly reduced over the old equipment.

It is claimed that this sustainer will entirely eliminate the rattling of sash and it makes possible a plank frame construction and narrow mullion. By the use of plank frames the interior trim may be reduced to 2 inches by 2½ inches in width, which is both economical and architecturally desirable.

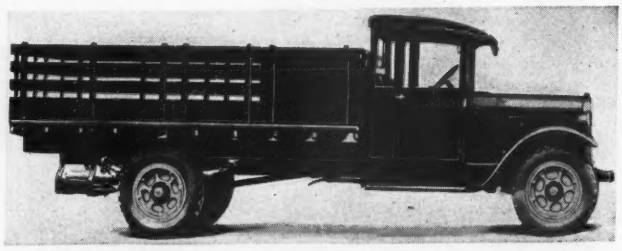
A mortise ⅞ inch wide, 1¼ inches deep and 4 inches long is cut in the sash opposite, or slightly above, the center. The spring is set flush with the surface of the sash. If additional tension is required it is provided by slightly loosening the upper screw "A" and elevating the lower screw "B," which is an adjusting screw, and then again tightening the upper screw.



A Sash Sustainer to Replace Ropes, Weights and Pulleys.

New Six Cylinder Truck

ONE of the best known manufacturers of four cylinder motor trucks has recently introduced a complete new line of trucks, the feature of which is a fast and powerful six-cylinder, two-ton chassis available in three types. It is stated that the quick acceleration and braking and the fast economical service on the open road of these new trucks is comparable to that of fine passenger cars. For this reason their use is expected to aid materially in speeding up traffic and lowering transportation costs. At the same time the qualities of rugged strength and dependability which have characterized the four-cylinder line are retained in the new sixes.



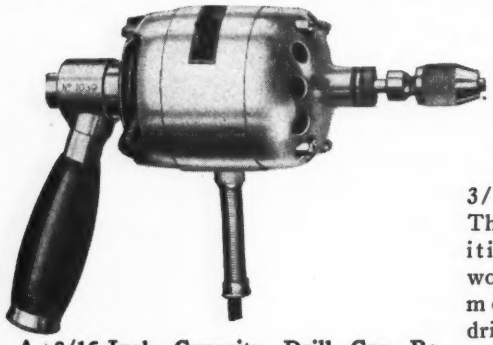
This New Six Cylinder Truck Is Now Being Put Out by a Company Which Has Been a Leading Producer of Four Cylinder Units.

A four-speed forward transmission assures surplus pulling ability for emergencies and makes possible moderate engine speed for fast, long runs. The transmission is of the heavy duty type. Four-wheel hydraulic brakes are another notable feature of the new trucks which may be had with various axle gear ratios which are optional with the purchaser. This last item makes it possible to give better service to the owner by careful consideration of his power requirements.

✣

Light, High Speed Drills

THE drill illustrated here is one of two new models recently placed on the market, both being light weight, high speed, electric, hand drills. These drills are made in two sizes, one with a capacity up to ⅛-inch, the other with a capacity up to 3/16 - inch. These capacities are for woods and soft metals the drills being too high speed for drilling in iron and steel. In fact, in designing them, the object was to produce a drill at a very reasonable cost that would drill small holes rapidly in woods and soft metals.



A 3/16-Inch Capacity Drill Can Be Used with Handle in Either Pistol Grip or Straight Position.

While the ¼-inch drills usually run from 5 to 7½ pounds in weight these drills weigh only 2¼ and 3¼ pounds, respectively. They are so light that it is said they can be perfectly controlled with one hand, leaving the other hand free to hold hinges, ornaments, fixtures and so on while the screw or rivet holes are being bored.

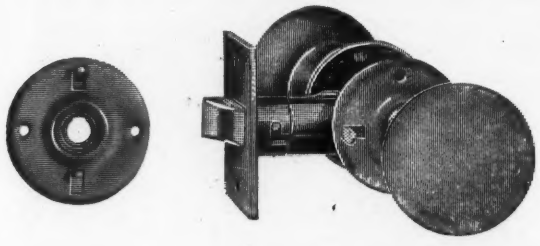
In order to see just how fast these drills would operate at maximum capacity of 3/16-inch a test was made with an ordinary twist drill. In one test, ⅞-inch, soft pine board holes were drilled at the rate of 120 per minute. In the other board, of good hard oak, ⅞-inch thick, from 48 to 56 holes per minute were bored without effort.

✣

Locking Rosette Added to Latch

A WELL-KNOWN line of interior tubular latches has been augmented by the addition of a locking rosette, a one-piece solid filler, new style of base and knob. The locking rosette saves the major portion of the cost of an individual lock and the cost of installing it, for it simply takes the place of the old type solid rosette and does not increase the cost of installing the latch.

The new latch is solid brass and is offered to the trade with diamond cut glass knobs, plain glass knobs, brass knobs or in any combination and any desired finish. Like all the latches made by this company, this latch is rugged and simple in construction and requires no mortising. Boring two holes is all that is necessary to install it. It is a very attractive, efficient and economical latch for bathrooms, bedrooms or other interior doors requiring locking from one side only.



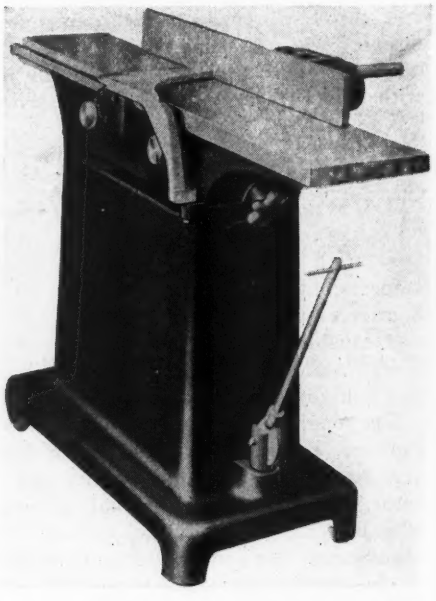
The Locking Rosette, at the Left, Added to These Well Known Latches, Takes the Place of the Old Solid Rosette.

✣

A New Jointer

THE machine illustrated here is a new union motor on arbor 8-inch jointer mounted on a portable truck-type base. It is also supplied in the bench type. This machine is 44 inches over all with a 24-inch front table and 18-inch rear table. The rabbetting groove in the rear table and the vertical adjustment of the front table makes it possible to rabbet up to ½ inch on this machine. Both front and rear tables can be conveniently adjusted.

Equipment of this machine includes ball bearing, repulsion induction type motor mounted on an arbor and a three-knife safety cylinder carrying three knives 8¼ inches long. This motor can be furnished suitable for use from lighting current or power line, whichever is preferred. The fence is conveniently adjustable and the knives are carefully guarded.



This Machine Is Supplied Either as Shown Here or in the Bench Type.

"Bearing Gifts to the Sun God"

This painting, representing a votive offering to the God Horus, was found on the wall of an Egyptian tomb dating back somewhere between 2500 and 3000 years. The colors were mixed in wax. In spite of centuries of conditions unfavorable to their preservation, the colors are as fresh and vivid today as though laid on yesterday.

A New Wall Finish with a Reputation 3,000 Years Old

THOUSANDS of years before oil colors were invented the ancient Egyptians produced mural paintings with colors carried in wax. Every specimen of these ancient encaustic paintings in existence today is remarkable for one feature—**the colors are still as fresh and vivid as though laid on yesterday.**

The ancient art of encaustic painting, lost to the world for 1500 years, is now revived and made commercially useful by the introduction of Johnson's Liquid Wax Glaze for the artistic treatment of walls in both public buildings and private offices and homes.

This new medium, with a 3,000 year old reputation for durable beauty, offers many advantages to architects, contractors and decorators.

1. Every color effect suitable to the finish of walls can be obtained, in any desired combination of color, shade, tint or tone.

2. Mottled, shaded and pastel effects, impossible to produce with any other finish, give the decorator an unlimited range of artistic treatments to draw upon.

3. Experiments in color schemes, where necessary, can be made on the wall and easily removed or changed until satisfactory. With no other medium is it possible to meet the wishes of a critical customer so easily and at such little cost.

4. Any effect, once obtained, retains its original appearance until removed. Colors mixed in Johnson's Liquid Wax Glaze do not fade in sunlight, nor are they affected by room temperatures or dampness.

5. If it ever becomes necessary to remove surface dirt from a wall finished with Johnson's Liquid Wax Glaze, it can be washed with soap and water.

6. Johnson's Liquid Wax Glaze is extremely economical, both in application and material cost. Each section of the wall can be finished in one operation. No resetting of ladders or scaffolding is necessary. Johnson's Liquid Wax Glaze has a covering capacity of 700 square feet per gallon.

7. It is extremely simple to apply. Only the simplest tools are needed. There is absolutely no danger of laps, streaks or brush marks. Any good decorator can handle this new finish perfectly with a little practice.

8. The finish can be removed entirely, at any time, by washing with Johnson's Natural Wax. The surface is left in ideal condition for refinishing. It is not necessary to use dropcloths, or tear up rooms.

You will recognize at once the outstanding importance of these advantages. You will want to use Johnson's Liquid Wax Glaze.

See the finished panels on display at any of our branch houses, or write for one quart sample FREE with complete specifications and instructions for use. When they arrive, make some experiments, see how easy it is, and be among the first to offer this new, popular, profitable wall finish in your community.

JOHNSON'S LIQUID WAX GLAZE

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ATLANTA
16 West Peachtree Pl.
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1645 Superior Ave.
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DETROIT
3155 Grand River Ave.
KANSAS CITY
2433 McGee Trafficway
LOS ANGELES
1151 Santee St.
LOUISVILLE
115 South 6th St.
MILWAUKEE
936 Third St.
NEW ORLEANS
500-506 Magazine St.
NEW YORK
46-48 Lispenard St.
OMAHA
1407 Harney St.
PHILADELPHIA
410-412 Commerce St.
PITTSBURGH
926 Duquesne Way
SAN FRANCISCO
1250 Folsom St.
ST. LOUIS
2116 Locust St.
ST. PAUL
1930 St. Anthony Ave.
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314 Bell St.

Clip to your letter-head or business card

S. C. JOHNSON & SON, Dept. A. B. 11. RACINE, WIS,
"The Wax Finishing Authorities"

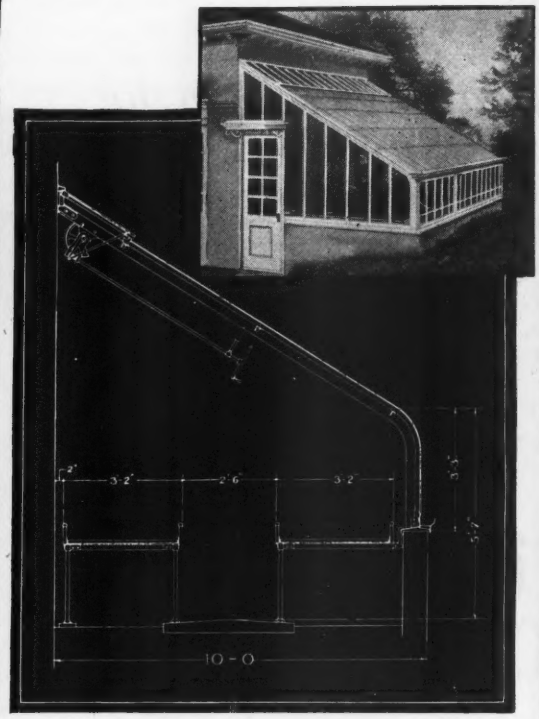
I am interested in the use of Johnson's Liquid Wax Glaze for decorating textured and sand finished walls.

Please send me one quart sample FREE together with complete specifications and instructions for use.

Name.....

Address.....

City..... State.....



Complete Plans and Specifications with Every Hitchings Sunshine Room

YOU don't have any guessing to do, when you put up a Hitchings Sunshine Room.
The metal frame is all cut to measure, all holes are punched or drilled, all bolts are ready for the holes.
Every wooden part is cut to fit, so far as possible.
Every part is located on the plans we furnish.
The specifications are clear.
You know just what you are getting and what to do with it.
You can fit in your Hitchings Sunshine Room, as easily as you set in a refrigerator or the boiler.
Not a hitch with any average workmen.
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(Please print plainly—Name and Address)
Send me full facts about your Sunshine Room.

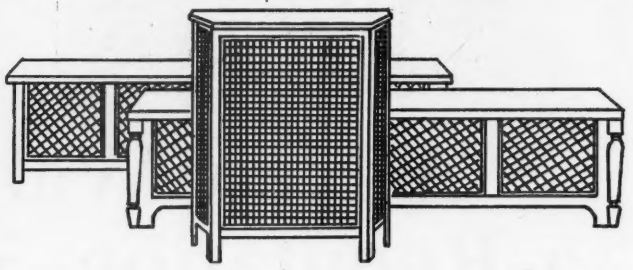
*Name*_____

*Address*_____

Quality Radiator Covers

RECENTLY there has been a great impetus in the development of radiator covers which hide the unsightliness of the old, unattractive cast iron radiator and convert it into an attractive piece of furniture. The making and marketing of sheet steel radiator covers has now assumed the proportions of an important industry. Many of the popular radiator covers not only convert the appearance of the unsightly radiator into the handsome appearance of a fine chest or cabinet but are also of further utility in that they provide for the humidifying the atmopshere of the rooms in which they are used.

Of this type is the line illustrated here. Engineers have designed these covers to accomplish the three-fold purpose of humidification, transformation of appearance and prevention of smudged walls. Because radiators used in various homes and buildings must vary greatly to fit the scheme of interior



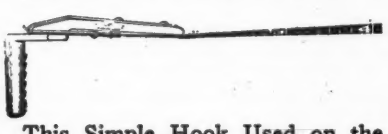
High Grade Sheet Steel Radiator Covers are Designed to Harmonize with the Finish and Decoration and Also to Provide Humidification.

decoration, woodwork finish and wall treatment, few installations are ever exactly alike in their requirements and this company has specialized in producing covers to fit varying requirements.

While these covers vary greatly in their finished appearance, they are all made of fine furniture steel and all parts are electrically welded together. They are finished with several coats of baked on enamel in any desired wood grain, marble or flat color effect desired. The company has always maintained a high standard of manufacture in all its products, which applies also to these radiator covers.

Improved Hook for Steel Tapes

A NEW and improved hook for steel tapes has been announced by a well-known manufacturer of measuring tapes, rules and mechanical tools. This hook enables one man to, accurately, take long or short measurements unassisted and is most inexpensive. It is easily slipped on and off the tape but cannot fall off.

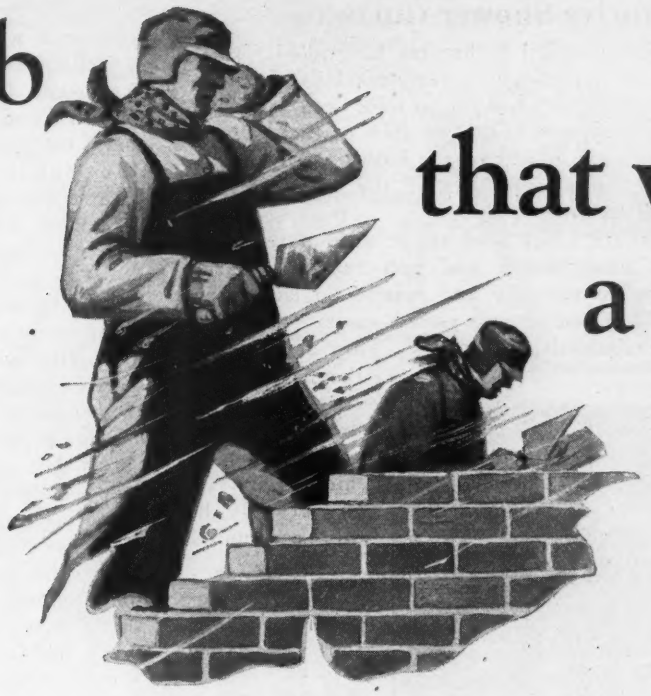


This Simple Hook Used on the Steel Tape Enables One Man to Take Long or Short Measurements Unassisted.

The zero of the tape falls at the inside of the hook which has a toothed edge and takes a firm and square grip on metal or other material the instant the tension is applied to the line, but releases itself when the tension is released. It swings with the ring of the tape, thus guarding against breakage of the line and allowing the hook to fold against the case when the line is wound in it.

This hook is of composition metal, sturdy yet of light weight, and is convenient to carry anywhere, being but 2 inches long. It is suitable for standard steel tapes ⅜ inch wide and is an article which will save its cost many times over.

Here's a job that was a job!



LAST winter, John Griffiths & Son Company, Chicago, received the general contract to add seven stories to the twelve story Standard Oil Company Office Building on Michigan Boulevard. The working conditions on this project were about the most difficult conceivable, particularly as regards masonry.

Fronting Lake Michigan, 12 stories in the air, the brickwork was started in December, and progressed rapidly to completion the following spring. On many days the weather was bitterly cold, zero in fact. To make matters worse, 16 pound oversize hard shale brick were used.

Despite all these obstacles, the masonry was completed on schedule, and Carney Cement was used for all mortar.

THE CARNEY COMPANY

DISTRICT SALES OFFICES:

CLEVELAND, CHICAGO, DETROIT, ST. LOUIS, MINNEAPOLIS

Cement Makers

Since 1883

Specifications:
1 part Carney Cement to 3 or 4 parts sand depending upon quality of sand.

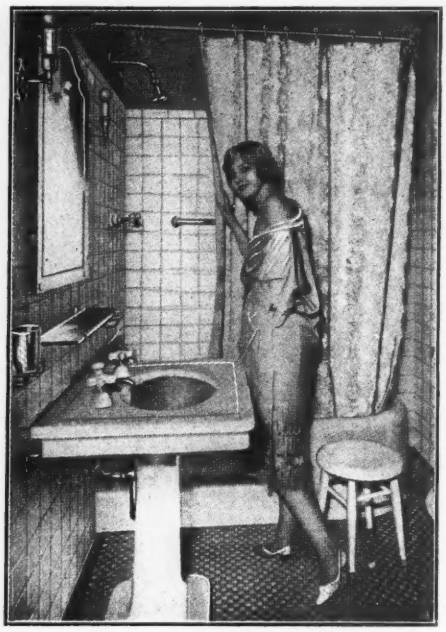
CARNEY CEMENT

for Brick and Tile Mortar

Decorative Shower Curtains

THE vogue for beautiful bathrooms has called forth a new type of shower curtain to replace the plain, undecorative, duck curtain which has for so long been associated with the bathroom shower. Curtains such as that pictured here enhance the cheerfulness of the bathroom by adding a touch of bright color which sets off the spotlessness of the tile walls and fixtures.

These curtains are guaranteed to be absolutely waterproof, odorless, unshrinkable and non-crackable. They retain their color permanently and require no laundering. They cannot mildew and provide perfect sanitation by drying quickly and eliminating dampness. They are made of the finest material, but cost no more than a good grade duck curtain and are said to actually be more economical than duck.



Colored Shower Curtains Are the Latest Development in the Popular Vogue of More Colorful Homes.

Curtains in a variety of materials and several colors are obtainable, and in two styles. The first is a colored fabric waterproofed, the fabric and coating being so thoroughly bonded that they cannot separate in spite of the roughest use. The coating comes in either neutral gray or various attractive tints to match the color of the fabric.

The second type is a double coated curtain. This is a strong specially woven fabric waterproofed on both sides in various solid or brocaded colors. The brocades have attractive designs superimposed on the outside.

The single coated curtains are stocked in cretonne, sateen, Jap silk, moire silk or crepe silk. Special curtains can be made of materials to include any desired design and coloring.

✣

Sealing Wallboard Joints

THE building trade has long contended with the problem of properly sealing the joints between panels of wallboard insulating material. Heavy paper and linen or muslin pasted over the cracks did not entirely overcome the breaking of the wall decorations and ordinary screen wire cloth would not lie flat, having a tendency to spring away from the wall, causing breaking or bulging in the wall covering.

A well-known manufacturer of metal lath took up this problem in conjunction with the manufacturers of wallboard and has now developed two new products which meet the situation. The first of these offers a practical and economical means of sealing joints in wallboard panels to which plastic paint or wallpaper is to be applied. It consists of wire cloth that is made from soft, annealed wire, put up in rolled strips 200 feet long and 3½ inches wide.

These rolls are easily handled. Strips can be cut to the proper length and pasted with plastic paint to the wallboard, one half on each side of the joint. The bonding paste is forced through the mesh with a trowel or scraping knife and spread on either side of the wire to avoid ridges. The special wire insures a product that is soft and pliable and will not spring away from the wall.

The Joints of Wallboard Are No Longer a Problem with This Sealing and Reinforcing Material Available.

The other product is a new form of this company's wire lath designed to cover the joints between panels to which plaster is to be applied. It is made in strips 50 feet long and 4 inches wide. Its large mesh permits the plaster to pass through and form a bond with the board.

✣

New Improved Roller Bed

ONE of the most outstanding manufacturers of space-saving equipment has recently announced the development of a roller bed which they say has been planned and developed from the architect's viewpoint of increasing the number of apartments through the use of space-saving equipment. No elaborate plans of construction are required with this bed. At night it is easily rolled to any spot desired and is instantly made ready for sleep. When not in use it is raised, with the bedding intact, and rolled to a plain closet which conceals it.

This bed is made in three sizes, full size, three-quarter size and twin size, in two designs, and is finished in American walnut finish or in any special enamel finish desired. It is so evenly balanced that extreme weight applied at the head end of the bed cannot accidentally raise the foot end off the floor. Neither, when it is in the upright position, can it be tipped over accidentally. It is mounted on an all-steel portable carriage, fitted with smooth-running ball-bearing casters so that it can be easily and quickly rolled to any desired place. The wheeled carriage is bound with felt so it cannot mar the furniture if accidentally bumped. The construction is all steel and highly durable.

Here Is a New and Improved Roller Bed Offered by a Well Known Maker of Space Saving Equipment.

The G-E Wiring System Will help you *Sell*

Instead of planning a house that is merely "equipped for electricity" you can install a complete G-E Wiring System at a slight added cost. And this is something that really gets attention.

Your prospective customer knows the G-E Wiring System. He has seen it advertised for three years. He knows it means quality throughout—and the most modern comforts and conveniences in every room. Taking customers through, you have selling points wherever you turn! There is nothing in a house today that will make a sale faster than this complete wiring.

A G-E Wiring System gives you selling points in every room.

Merchandise Department
General Electric Company
Bridgeport, Connecticut

WIRING SYSTEM
—for lifetime service

GENERAL ELECTRIC

A New Wall Fabric

TODAY wallpaper, plaster and fabric wall coverings vie in popularity as a means of wall decoration. Each of the three has its place and its own particular artistic merit. Realizing the need for a wall covering that would be neither plaster nor paper, a prominent company has recently developed a new line of wall fabrics. They are less expensive than plaster in rough finish or stucco effects and fill a place in interior decoration for which wallpaper is not so well suited.

The base of the wall coverings is a specially constructed cloth, tough yet light in weight. Over this cloth is applied several coats of long-wearing pyroxylin. The top coat is embossed in some suitable design. The reverse side of the cloth is left uncoated and has most excellent adhesive qualities. The fabric can be applied easily to all the usual types of wall construction.

A Room Decorated with a New Wall Fabric Which Offers Unlimited Variations of Color Effect and Design. Is Long Wearing and Can Be Cleaned Indefinitely.

The number of designs and color effects possible is practically unlimited. Of equal importance, however, is the extreme durability inherent in this new type wall covering. The fabric is scuff-proof, vermin-proof and extremely long wearing. Although it will not stain easily, should it become soiled after long periods of use, it may be cleaned readily with a damp cloth or scrubbed with soap and water if necessary. When applied over even poor quality plaster it will not show cracks. In fact, it acts as a bridge for the plaster and tends to hold it together, acting as a surface support.

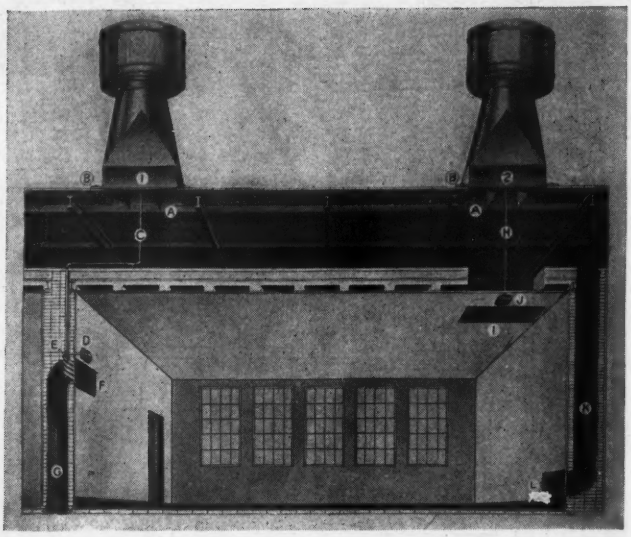
✣

Temperature Control Ventilator

WHEREVER the highest possible efficiency of temperature control and ventilation is required the equipment illustrated will be found applicable. It is of unusually substantial construction and is warranted stormproof. It is made of either rust-resistant metal, copper bearing or galvanized iron and is braced so as to assure the longest possible life. Dampers used with this ventilator when required are of the butterfly type, felt edged and guaranteed air tight.

The illustration shows two systems of installing. Fig. 1 represents joint unit operation from the temperature of the room by the temperature controller damper "A," with the heat flue damper "E," which is operated by the sylphon regitherm "D," through the register connecting rod "C." Air enters the room from the heat flue "G" and register "F" and is drawn from the room through the register "L" and duct "K" to the loft and out of the building by the ventilator "I."

Fig. 2 represents a connection to the room through the loft flue and ceiling register "I" with the automatic temperature controller damper "A" connected to sylphon regitherm "J" by the operating rod "H" which operates the damper "A" from the temperature of the room. Or the flue "K" may be used. The flange for connecting the ventilator to the room is indicated at "B."



Two Possible Methods of Handling Ventilation with Equipment Designed to Give the Highest Degree of Efficiency.

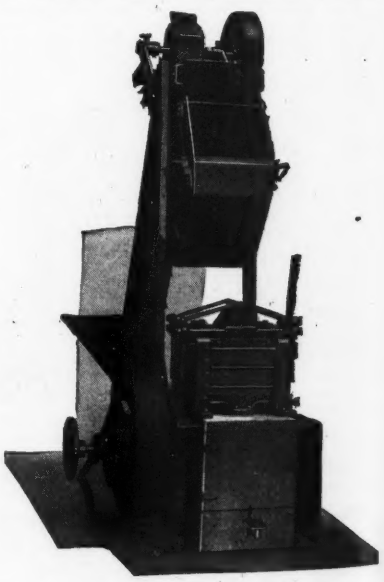
✣

Concrete Block Machine

ONE manufacturer of concrete machinery has recently announced a new single power press stripper which is classed as an all-purpose machine. It may be run as a production machine for any unit with a few changes of the mould box. Specially arranged cams force the concrete uniform the moment the tamp comes in contact with the material. The blocks are pressed to a uniform density from top and bottom and come out square. The edges are sharp and perfect.

With the material mixed, two men using this machine can make about 1,200 plain blocks of 8 by 8 by 16-inch size per day. Face blocks of the same size can be made without change of the mould box, which is filled in the same manner by means of a special filling attachment. By removing the cores from the mould box and replacing the tamps, 4 by 8 by 16-inch solid blocks can be produced two at an operation.

The construction of this machine is of the highest quality throughout and it is equipped with an ample capacity filling hopper which is filled, at the proper speed for production, by a belt-type elevator. The machine is completely enclosed, all working parts being in the lower base protected from dirt and grit. A positive control lever makes the operation simple, one movement of the clutch lever making a block. There is a positive strike-off of excess material.



This Machine for Making Concrete Block Can Be Run on a Production Basis for Any Unit.

CANNON BALL

"One man" track.
Easiest to put up.
Hardest to wear out.

Beats 'Em All

Every pair of Cannon Ball Hangers you put up makes a friend for you. They just can't stick or bind. After years of use they run just as easy as the day you put them up.

No. 1068 Hanger illustrated here has pressed steel ball wheels, enclosed in a round track shielded from weather. The slot is at the very bottom of the track so that condensed moisture runs out and does not mingle with rust, scale and dirt to freeze and stop the hangers. Adjustable three ways—for thin or thick doors—for movement up or down—to or away from building.

Actual Size
Note the wide tread and even bearing no matter how track tips or sags

CANNON BALL HANGERS have steel ball wheels that always

Bear Even
Wear Even
Run Even

no matter how the building sags or warps.

They last for years and years. Other Cannon Ball Hangers embody the same advantages. They all work in Cannon Ball track installed in straight runs or parallel runs attached to side wall or ceiling. The same hangers work in SEAL TITE Cannon Ball which has a weatherproof cover that is part of the track.

Both tracks in long or short lengths.

Send for 225-page book showing all about Cannon Ball Hangers and their use and other builders' specialties

Hunt-Helm-Ferris & Co., Inc.

Albany New York — HARVARD ILLINOIS — San Francisco California

STAR Equipment

Cannon Ball Garage Door Sets embody all the good Cannon Ball features. For one to six doors—rolling, folding or around the corner. Complete sets in boxes—or separate parts just as you want them.

Bradley-Miller
Michigan White Pine
Frames

"HERE'S THE WAY BRADLEY-MILLER FRAMES COME

- - -

IMMEDIATE DELIVERY TOO

- - - -

EVERY DEALER CARRIES THEM"

- - - -

These Two Bundles are Made Up of Seven Units

Give them to your carpenter and he can nail them up in less than ten minutes into the finest quality frame you ever saw.

Your particular needs can be quickly supplied by the Bradley-Miller dealer in your market's customary design as well as in standard types.

Bradley-Miller frames assure the dealer's reputation. Made of Michigan White Pine, the finest quality, weather-proof frame on the market.

Send coupon for catalog and Construction Booklet.

BRADLEY-MILLER CO.
1200 Marquette St., Bay City, Mich.
Gentlemen: Please send me booklet describing Bradley-Miller Michigan White Pine Frames.

Name.....
Address.....
Dealer's Name.....
Address.....
Does your dealer handle Bradley-Miller Frames?.....

NEWS of the FIELD

A. G. C. Meeting and Exposition

REPRESENTATIVES from among the personnel of the 2,300 contracting and building companies, from all parts of the country, which are included in the membership of the Associated General Contractors of America, will form the nucleus of attendance at the National Construction Exposition to be held January 23 to 27, 1928, in the West Baden Springs Hotel, West Baden, Ind. The exposition coincides with the ninth annual meeting of the association.

Additional attendance will be composed of non-member builders and contractors, architects and members of highway and public improvement bodies from all parts of the country The exposition was inaugurated in response to a demand by construction materials, supplies and equipment companies. Many of the country's leading manufacturers have taken space and will display materials, supplies, equipment and machinery.

✣

New Company Organized

A NEW company, under the name of Orcutt & Company, Inc., has recently been incorporated for the purpose of manufacturing and selling Kiddie play rooms, conservatories and rooms for the general benefit of health, using the well known product Vita Glass, to attain results. The conservatory is designed to give the maximum result in the use of this glass. This type of construction will be developed as an aid to the builder in the sale of his property. The products of the company will be known as the Vita Ray Conservatories. The company will maintain executive offices at 80 Broad Street, Elizabeth, N. J.

✣

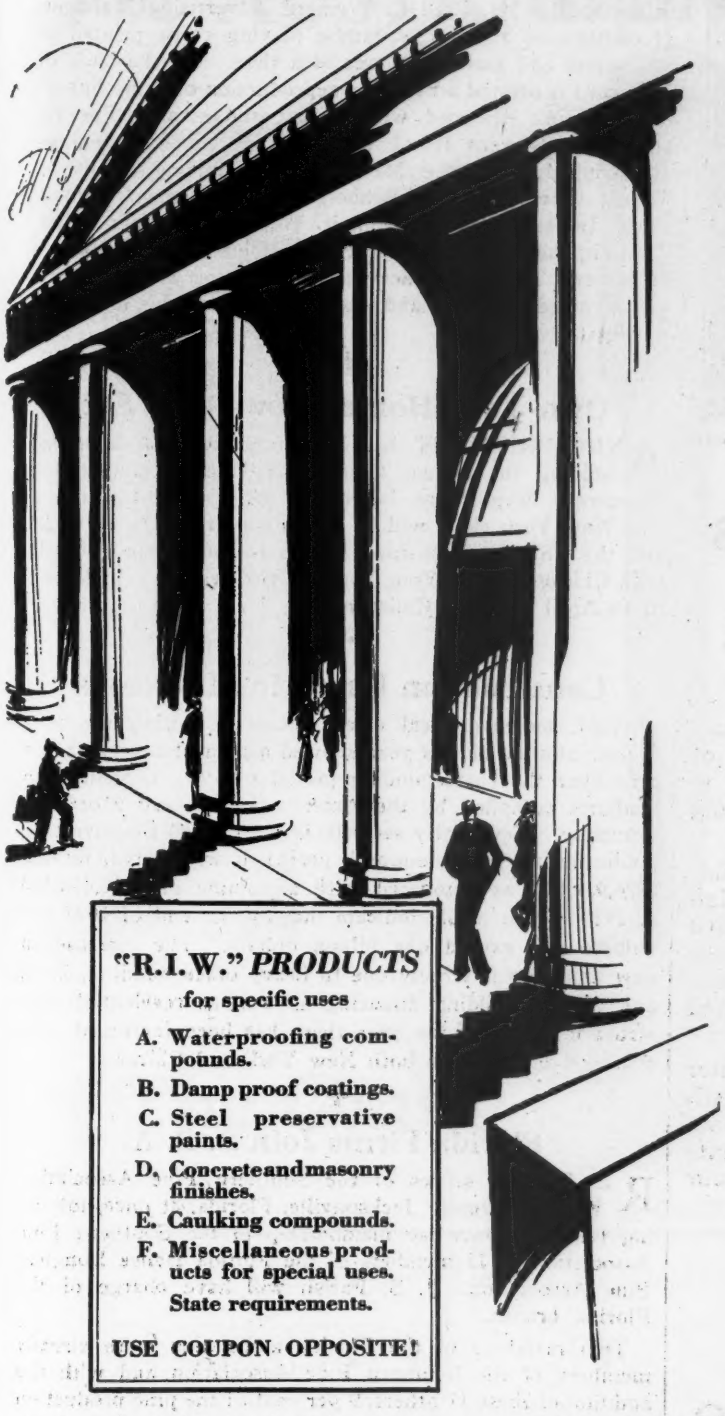
Big Shingle Campaign Launched

THE Consolidated Shingle Mills of British Columbia, Limited, are launching an advertising and merchandising campaign for edge-grain shingles and the first advertisement to the general public, building trades and lumber dealers has already made its appearance in a number of the leading national advertising mediums. Color pages are included in the plan to feature the beauty of the all shingle house.

The Consolidated Shingle Mills of British Columbia, Limited, is the affiliation of a group of British Columbia mills which have adopted rigid grading rules carried out by inspection and identified by the trade name "Edgewood." This name, as well as the manufacturer's own brand, will appear on every bundle of the Consolidated Mills shingles.

The purpose of this advertising is to establish in the minds of the consumer and building trades the merits of red cedar shingles as a whole and Edgewood, edge-grain shingles in particular. Considerable dealer helps and literature are included in this advertising plan, as well as territorial sales drives for the re-roofing business.

"R. I. W." LEADERSHIP



in Technical Paints and Waterproofing compounds is backed by over 80 years of achievement, and is thoroughly proven by use in monumental building operations throughout the world. Whatever your need, there is either a special "R. I. W." product or you can command our laboratory staff for a specific recommendation where unusual conditions are to be met.

For *Integral Waterproofing* of Mass Concrete, Portland Cement Mortar or Stucco Construction

"R. I. W." Toxement lubricates the mix due to its colloidal nature, increasing plasticity and workability. It gives a dense concrete or cement mortar mass that is absolutely waterproof, and results in proper and complete hydration of the cement.

"R.I.W." *PRODUCTS*
for specific uses

A. Waterproofing compounds.
B. Damp proof coatings.
C. Steel preservative paints.
D. Concrete and masonry finishes.
E. Caulking compounds.
F. Miscellaneous products for special uses.

State requirements.

USE COUPON OPPOSITE!

SEND THE COUPON BELOW for full and complete information on your particular waterproofing and dampproofing requirements. Use the list of special *"R. I. W."* products at the left for a convenient check.

TOCH BROTHERS,—Dept. A
443 Fourth Ave., N.Y. (or 2600 Federal St., Chicago)
Gentlemen—
I am particularly interested in further information about Toch Brothers' products for checked uses:

A B C D E F

Please send me complete literature on these subjects.

Name.....
Firm.....
Address.....

OVER 80 YEARS EXPERIENCE

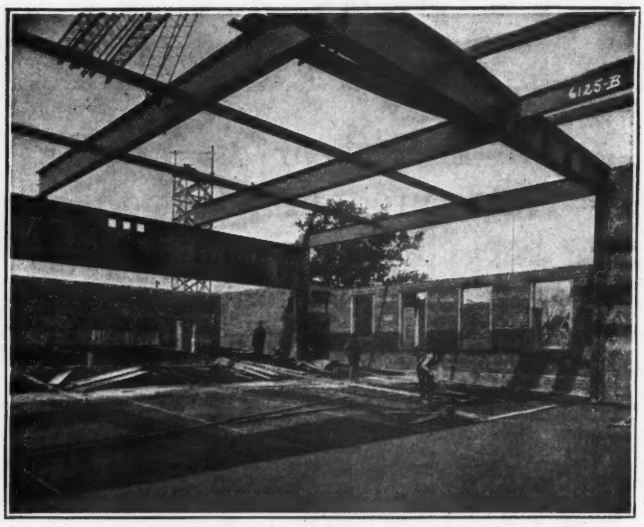
TOCH BROTHERS

TECHNICAL PAINTS and WATERPROOFING COMPOUNDS

NEW YORK
CHICAGO
LOS ANGELES
LONDON

REMEMBER IT'S WATERPROOF
RIW

division of
STANDARD VARNISH WORKS



School Building, New Lexington, Ohio, Built with Massillon Bar Joist Fireproof Floors. View Shows Pouring Concrete Slab.

Massillon Bar Joists

For Fireproof Floor Construction

WHEN Massillon Bar Joist Floor Construction is used the dependable strength of steel carries the floor load. The Contractor is certain that he will get a good, substantial job, regardless of the temperature.

Contractors usually place the joists as the building goes up. In Winter they pour the roof slab first. This slab is protected against freezing with salamanders below and straw above. The floor slabs are poured after the building is enclosed. The uncertainty of winter concreting is eliminated and the expense reduced to a minimum.

Massillon floors provide a dependable winter construction. The economy to your building will best be brought out by asking for a quotation. Our Engineers will prepare a layout and estimate if you will send us a sketch or plans of your building.

Other Massillon Products

Roof Trusses—Bank Vault Reinforcing—Metal Lath—Steel Windows—Reinforcing Trusses and Steel Forms—Fabricated Structural Steel—Concrete Reinforcements

THE MACOMBER STEEL CO.

Successors to The Massillon Steel Joist Co.
Originators and Largest Manufacturers of Bar Joists

909 Belden Ave., N. E. Canton, Ohio

Canadian Manufacturing and Sales Agents:
Sarnia Bridge Co. Ltd., Sarnia, Ont.

MASSILLON BAR JOISTS

PATENTS PENDING

Two Bars Top and Bottom — Solid Steel Welded Joints

Novel Weatherstrip Promotion

A NOVELTY in advertising promotion is being mailed out by the Chamberlin Metal Weatherstrip Company, originated by Mr. Fred C. Weinert, Advertising Manager. It consists of a series of jumbo playing cards printed in full colors and mailed out one at a time. On the back of each card is printed a half-tone reproduction of some important building equipped with Chamberlin strips. For instance, the Stevens Hotel, with its 4,200 window openings all stripped; also, the Medical Arts Building, Houston, Texas; Cleveland High School, Cleveland; the Columbia Club, Indianapolis; the Illinois Women's Athletic Club, Chicago; the Roosevelt High School, Detroit, and a number of others. The views shown are interesting and attractive and a considerable demand has developed for this ingenious novelty.

✣

Own-Your-Home Show Dates Set

ANNOUNCEMENT has been made of the dates for holding the annual Own Your Home Building and Equipment Expositions in New York City and Chicago. The New York show will be held February 21 to 28, 1928, and the Chicago Exposition, which is planned to coincide with Chicago's Own Your Home Week, will be held March 31 to April 7, in the Coliseum.

✣

Construction Financing Increases

FIRST mortgage real estate financing during the first nine months of this year showed a gain of nearly 13 per cent over the corresponding period of 1926, according to statistics compiled by the American Bond and Mortgage Company. New realty security issues offered the investing public during the nine-month period, it was stated, totaled $776,951,150, as compared with a volume of $690,496,350 in 1926, which would indicate that by the end of 1927 the volume will exceed one billion dollars. The increase in new financing is largely due to heavy office building, hotel and theater building financing as well as residential construction. During the year there has been increased construction financing in both New York and Chicago.

✣

Florida Firms Join S. P. A.

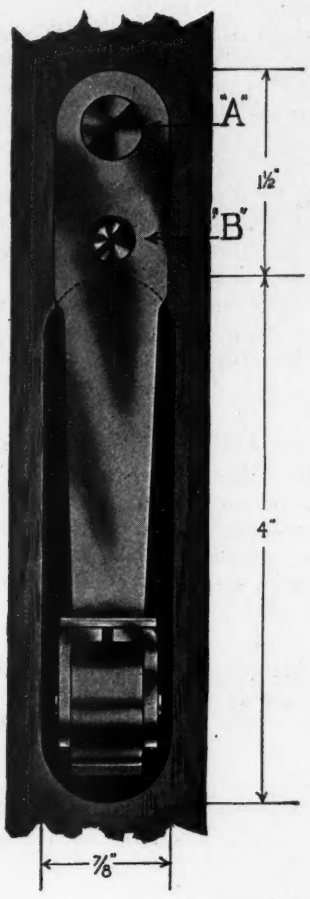
REGIONAL offices of the Southern Pine Association will be set up at Jacksonville, Florida, at once, following the acceptance for membership in the Southern Pine Association of 11 members of the Florida Dense Longleaf Pine Association. J. S. Farish will have charge of the Florida branch.

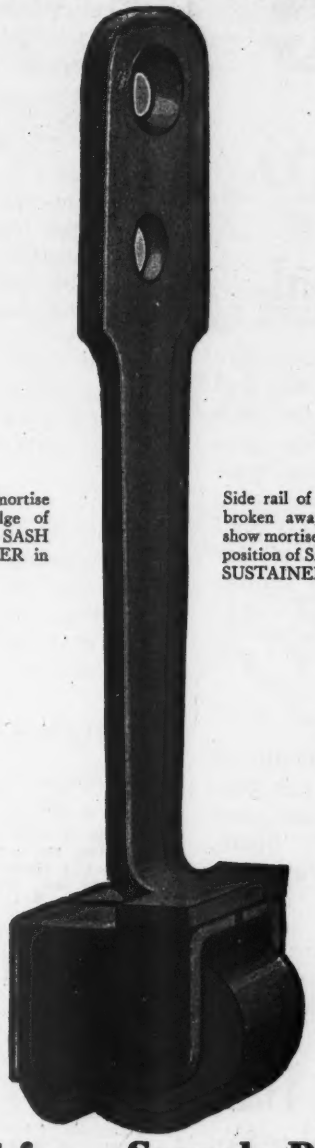
Two members of the Florida association were already members of the Southern Pine Association and with the addition of these 11 others, 9 per cent of the pine production of Florida is now represented in the Southern Pine Association. The Florida association will continue to function in trade promotion and advertising activities, while all other services will be co-ordinated with the Southern Pine Association services.

The Florida manufacturers who have become members of the Southern Pine Association are: St. Andrews Bay Lumber Co., Millville; St. Andrews Bay Lumber Co., Sherman; W. C. Sherman, Lake Wales; J. M. Griffin Lumber Co., Holopaw; J. Ray Arnold Lumber Co., Groveland; Roux Crate Co., Bartow; Keysville Lumber Co., Keysville; J. W. McWilliams Co., Fort Meyers; McGowin-Foshee Lumber Co., Willow; The E. W. Bond Co., Lake Helen; the Grove-Dowling Hardwood Co., Gulf Hammock.

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

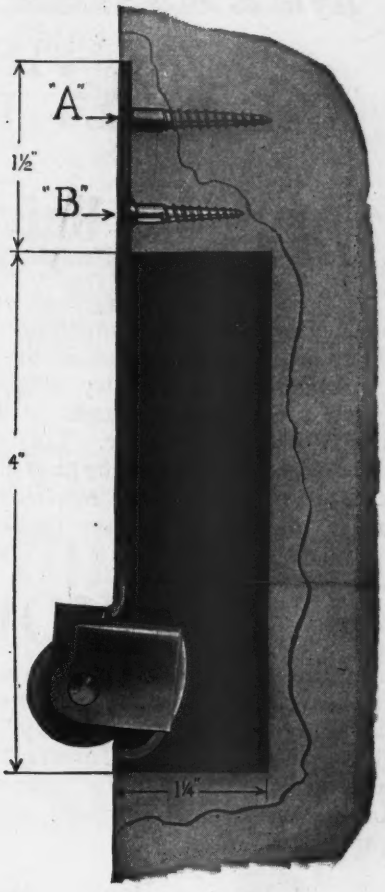
The AUSTRAL SASH SUSTAINER





Showing mortise cut in edge of sash with SASH SUSTAINER in position.

Side rail of sash broken away to show mortise and position of SASH SUSTAINER.



The Giant in Armor

Send for a Sample Pair

Used in City Houses, Rural Houses, Bungalows, etc.

STRONG—COMPACT—EASILY OPERATED—CUTS ONE-THIRD OFF THE COST OF YOUR WINDOWS —COSTS ONLY HALF AS MUCH FOR APPLICATION —REQUIRES ONLY HALF THE LABOR—AUTOMATICALLY SUSTAINS THE SASH IN ANY POSITION.

Here's a Big Opportunity

Over 10,000 builders are now using the Austral Sash Sustainer.

WE WANT TO PLACE THE AUSTRAL SASH SUSTAINER IN THE BUILDER'S HANDS; when he sees what it is he will appreciate its superior advantages.

Ask your mills for plank frames with sash mortised for AUSTRAL SASH SUSTAINERS and save time and money.

AUSTRAL WINDOW CO.

101 Park Avenue **New York**

AUSTRAL
WINDOW CO.
101 Park Avenue
New York

Gentlemen:

Please send me a sample pair of AUSTRAL SASH SUSTAINERS for which I am enclosing 50 cents (this covers actual production cost together with postage and handling).

Name.....

Concern.....

Address.....

MONEY MAKING

QUALITIES ARE BUILT INTO

The

American Universal
FLOOR SURFACING MACHINE

That's why the big floor men everywhere use this equipment. This machine does finer and faster work than any other method. On new or old floors, the quality of the surface produced meets the demands of the most particular property owner. This fact is known and acknowledged throughout the world. That is why operators of "American Universals" are always busy—always making big money and always successful.

DO YOU

want independence and success?
If so, write at once and get the full details of the "American Universal Way." You can purchase an "American Universal" on our year to pay plan that only requires $75 down. Liberal allowance on your old machine, regardless of make.

Don't delay getting the facts about this great money maker. Right NOW is the time to get started.

The American Floor Surfacing Machine Co.

Originators of Floor Sanding Machines

515 So. St. Clair St.
TOLEDO, OHIO

BRANCHES
IN PRINCIPAL CITIES

The Rate of Cement Production

A NEW barometer of business conditions has been established by the Department of Commerce by including, each month, in the statistics of the cement industry, a figure showing the ratio of production to total capacity. This places the cement industry on the same statistical basis as the steel industry in that its operation ratio, production, shipments and stocks on hand will be made public monthly.

The statement for the month of September establishes the total capacity of the cement industry, as of September 30, 1927, at 229,020,000 barrels. The total capacity for the year 1926 was a least 215,300,000 barrels. Since January 1, 1927, new plants and extensions and betterments in old plants have raised this capacity to at least 229,020,000 barrels.

On the basis of these estimates the 1926 production amounted to 76.4 per cent of capacity. The August, 1927, output represented approximately 94.4 per cent of the capacity of the plants for that month and the production for the first eight months of the year was 75.2 per cent of the capacity available during that period. Corresponding figures for September and for the first nine months of the year are 92.2 per cent and 77.2 per cent respectively.

✣

Open New York Office

THE headquarters of the Eastern Division of the Trade Extension Department of the National Lumber Manufacturers' Association have been located at 1743 Graybar Building, New York City, which is in the center of the lumber company office district of New York, on the corner of Lexington Avenue and 43rd Street.

✣

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of AMERICAN BUILDER, published monthly at Chicago, Ill., for October 1, 1927.

State of Illinois } ss.
County of Cook }

Before me, a notary public in and for the States and county aforesaid, personally appeared E. L. Hatfield, who, having been duly sworn according to law, deposes and says that he is the General Manager of the AMERICAN BUILDER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—American Carpenter & Builder Co., Chicago, Ill.
Editor—Wm. A. Radford, Chicago, Ill.
Managing Editor—B. L. Johnson, Chicago, Ill.
Business Manager—E. L. Hatfield, Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Wm. A. Radford, Chicago, Ill.
H. M. Radford, Chicago, Ill.
R. D. Radford, Chicago, Ill.
Wm. A. Radford, Jr., Chicago, Ill.
B. L. Johnson, Chicago, Ill.
E. L. Hatfield, Chicago, Ill.
G. W. Ashby, Berwyn, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

E. L. HATFIELD,
Business Manager.

Sworn to and subscribed before me this 26th day of September, 1927.
ANDREW JOHN NAUMANN.
(My commission expires Oct. 25, 1929.)

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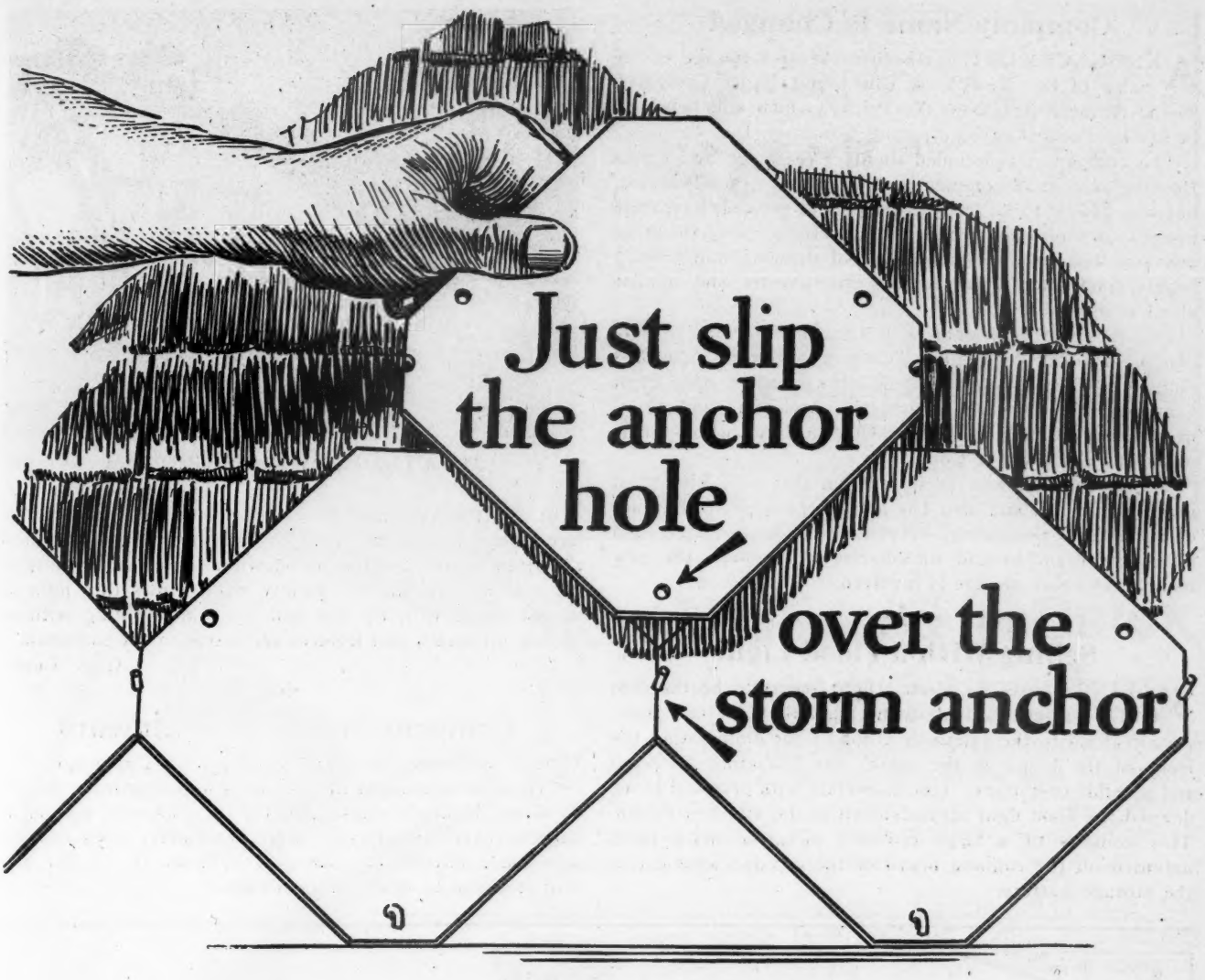


—and the shingle *drops* in place

IT'S practically impossible to make a mistake when you lay Johns-Manville Rigid Asbestos Shingles. The anchor holes and nail holes are already punched when the shingle comes to you. The storm anchors guide you so that each successive shingle slips naturally into place. You simply nail them on.

There's a tremendous field for roofing and re-roofing with these everlasting, fireproof shingles. It's easy work to get and easy work to do—when you work the Johns-Manville way.

Asbestos and its allied products
INSULATION
BRAKE LININGS
ROOFINGS
PACKINGS
CEMENTS
FIRE PREVENTION PRODUCTS

JOHNS-MANVILLE CORPORATION, MADISON AVE. AT 41ST ST., NEW YORK
BRANCHES IN ALL LARGE CITIES
For Canada: CANADIAN JOHNS-MANVILLE CO., LTD., TORONTO

JOHNS-MANVILLE
RIGID ASBESTOS SHINGLES

Company Name Is Changed

ANNOUNCEMENT has been made of a change in the name of the New York Blue Print Paper Company, 96-102 Reade Street, New York City, which will hereafter be known as the Charles Bruning Company, Inc.

This company was founded about 30 years ago by Charles Bruning as a small commercial blue printing establishment, but was grown to large proportions and expanded into the manufacture of blue print paper, drafting room furniture and supplies and the importation of drawing and tracing papers, instruments, engineering instruments and similar allied products.

Branches and subsidiaries are maintained in Boston, Miami, Pittsburgh, Detroit, Chicago, Newark and Los Angeles. The Boston branch is known as the Blue Print Company; the Newark branch, the Architects and Engineers Supply Company, and the Chicago branch, the American Blue Print Paper Company.

The old name gives the impression that only blue print paper is handled and also has a localized aspect. Because of these facts the change of name was decided upon and all of the branches and subsidiaries will assume the new name. No other change is involved.

✣

Selling With a Flood Light

SELLING houses by electric light seems to be the custom of present-day salesmen rather than the exception. As a real aid to the salesman a flood light illuminating the front of the house is the means for attracting attention and possible customers. One salesman, with practical ideas, devised the flood light means shown in the attached sketch. This consists of a large reflector light, or flood light, mounted on the running board of the car and attached to the storage battery.

Flood Lighting by Automobile Power.

In use the salesman drives his car to the property he has to sell, adjusts the light by maneuvering his car until the front of the building is shown to the best advantage. As will be evident, the facility with which this light is moved about with the car and the flood lighting without setting up stands and fixtures are assets to the salesman.

G. A. LUERS.

✣

Company Makes Appointments

THE National Steel Fabric Company, Pittsburgh, Pa., recently announced the following appointments: Robert L. Glose, formerly sales agent for the company, was made sales manager; Charles C. Mercer, formerly sales counsel, was made advertising manager; William H. Shaffer, Jr., will continue as dealer sales manager.

Outside or In—

You'll make more money painting the DeVilbiss way

No matter what nor when you paint, painting with the DeVilbiss Spray-painting System speeds up your work 3 to 5 times. Hours of time are saved and more dollars of profit made.

Besides, improved work is done on every sprayed job and you have a more satisfied crew of painters.

Investigate this well established, greater profit DeVilbiss way of painting. Interesting facts will be gladly mailed. Address—

THE DeVILBISS CO. 238 Phillips Ave. TOLEDO, OHIO

New York
Chicago
Detroit
Philadelphia
Indianapolis
San Francisco

DeVilbiss
Spray-painting System

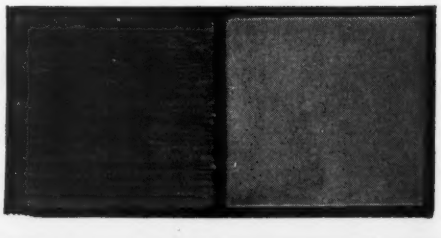
Pittsburgh
Cleveland
Cincinnati
Milwaukee
St. Louis
Minneapolis
Windsor, Ontario

Illustrating the Comparative Hiding Power of Brushed and Sprayed Coats of Paint

The hand brush puts on an uneven coating and the thin paint in the grooves wears away quickly. . . . The DeVilbiss Spray Gun applies a strong, even paint film that covers perfectly, that is durable and that wears down uniformly.

(Illustration shows same paint applied on identical surfaces —Photograph is unretouched and greatly reduced in size.)

One brushed coat -:- One sprayed coat



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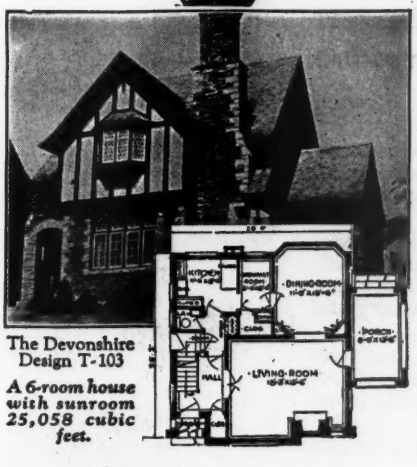
Meet the demand *for* BRICK

PEOPLE now realize that brick homes are not expensive to build, in fact, that first costs are but little if any higher than less durable construction. They value the protection against fire, flood, and hurricane. They know that with common brick they have maximum beauty, burned in; with permanence, economy in upkeep, and highest resale value.

This book, "Homes of Lasting Charm," will help you interest more people in brick-built homes. 120 photos and floor plans of houses actually built and lived in, with suggestions for beautifying grounds. Complete working drawings and specifications for any plan shown are available to you at nominal cost.



The Devonshire
Design T-103

A 6-room house with sunroom 25,058 cubic feet.

A brick-built home is easy to sell

—because common brick gives real brick construction at lowest cost. The house can be attractively, yet profitably priced.

—because the popularity of common brick is nation-wide.

—because brick construction has more talking points than any other kind—permanence, comfort, low maintenance, fire protection, high resale value.

Have you registered with the Common Brick Association as a builder who knows how economically and properly to construct a brick built house? If so, inquiries resulting from advertisements will be turned over to you for follow up.

The Common Brick Manufacturers' Association *of* America

2131 Guarantee Title Building
CLEVELAND, OHIO

BRICK *forever*

At Your Service
These District Association Offices and Brick Manufacturers Everywhere

Boston.....11 Beacon Street
Chicago.....605 Builder's Bldg.
Cleveland, Ohio Association
2124 Guarantee Title Building
Denver.....1735 Strout St.
Detroit.....400 U. S. Mortgage Trust Bldg.
Hartford.....226 Pearl St.
New York City..1716 Grand Cent. Terminal
Norfolk.....112 West Plume Street
Philadelphia.....121 North Broad Street
Pittsburgh...702 First National Bank Bldg.
Portland, Ore.....908 Lewis Building
Salt Lake City.....301 Atlas Blk.
Seattle, Wash.....913 Arctic Bldg.
Raleigh, N. C.
608 Commercial National Bank Building

Brick Books for Your Use

☐ *"Homes of Lasting Charm"—25c*
☐ *"Skinlled Brickwork"—15c*
☐ *"Multiple Dwellings of Brick"—10c*
☐ *"Farm Homes of Brick"—5c*
☐ *"Brick, How to Build and Estimate"—25c*
☐ *"The Heart of the Home (Fireplaces)"—25c*

Check above books wanted or send $1.00 for all of these books.

For Better Craftsmanship

THE Committee on Recognition of Craftsmanship of the New York Building Congress has recently issued a report covering 2½ years of activity in rewarding the skilled workmanship of building mechanics, in Greater New York, by presentations of certificates and gold buttons.

The result of the committee's work during this period shows the presentation of 371 certificates and gold buttons to honor craftsmen on 27 buildings.

✣

Seizing Wire Rope

By WALTER VOIGTLANDER, *Rope Engineer*

THE end of an ordinary wire rope should have at least three seizings to prevent unlaying which, if it occurs, would render the rope useless. The seizings may be replaced by fittings if they prevent unlaying of the rope. Annealed iron wire should be wound tightly in a close helix around the rope.

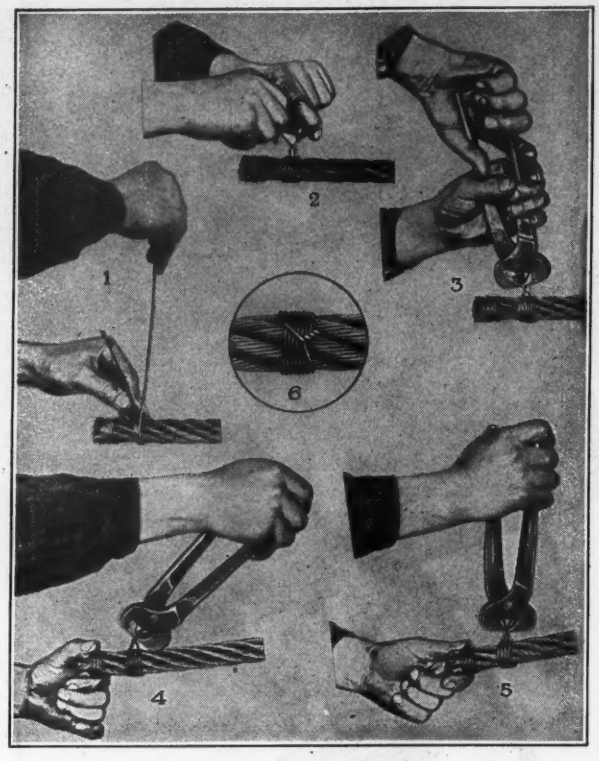
1. Wind the seizing wire on the rope by hand, keeping the coil together and considerable tension on the wire, winding over from left to right as shown at 1 in the illustration.

2. Twist the ends of the wire together counter-clockwise by hand so that the twisted portion of the wires is near the middle of the seizing.

3. Tighten the twist just enough to take up the slack. Do not try to tighten the seizing by twisting.

4. Tighten the seizing by prying the twist away from the axis of the rope with the cutters, as indicated at 4.

5. Tighten the twist again as in 3. Repeat 4 and 5 as often as is necessary to make the seizing tight. Cut off the ends of the wires and pound the twist flat against the rope.

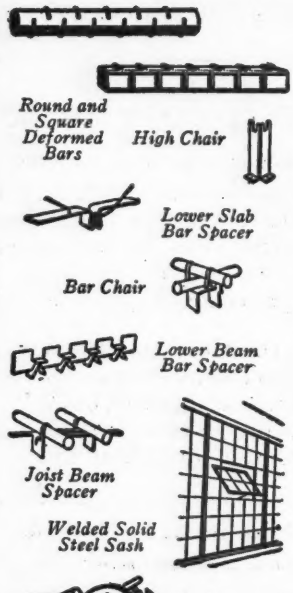


Illustrated Here Is the Proper Method for Seizing Wire Rope.

6. The appearance of the finished seizing is shown at 6.

Any annealed low carbon steel wire may be used for seizings, the size ranging for No. 10 to No. 18, depending upon the diameter of the rope.

Unusual Service for the Contractor



Ryerson combined service on all steel products saves time, money and trouble

The Special Contractors and Builders Division of Ryerson Steel-Service is without parallel in the building fields.

This department has its own warehouses and provides complete service on all reinforcing for concrete, Steel Joist, Metal Lath, Steel Sash, and all the various steel building products are also included.

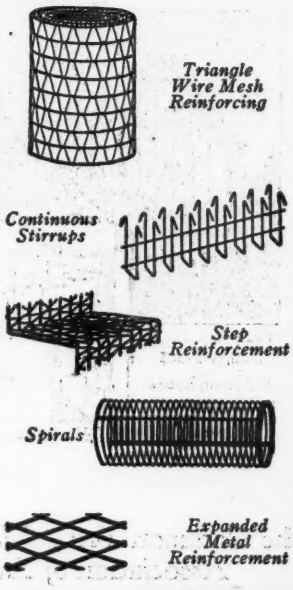
In addition, structurals, bars, plates, sheets, rivets, bolts, wire, etc., are furnished from the general steel departments. Trench braces, jacks, electric drills, and hundreds of other tools needed on every job are supplied by the machinery and small tool departments.

Contractors use the Ryerson Warehouses as if they were their own. Reinforcing steel, lath, sash and other miscellaneous materials are kept under cover until they are ready to use each item. Delivery is according to their schedule.

Large fleets of trucks and private switch tracks help provide service unequaled by any other source of supply.

All types of jobs are figured and lump sum or pound price quotations prepared.

Write for Complete Information.



JOSEPH T. RYERSON & SON INC.

CHICAGO CINCINNATI BUFFALO MILWAUKEE DETROIT JERSEY CITY ST. LOUIS CLEVELAND BOSTON

RYERSON REINFORCING-SERVICE

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WHAT'LL IT COST?

HoltBidders Find It Easy to Answer This Question Which Is Always Asked by Prospective Home Builders

By JOSEPH D. EDDY

"What will that house cost?"

THAT question is familiar to everyone in the building business as it is the first one that 99 out of 100 prospective home builders ask of the contractor or lumber dealer.

"I can tell you in less than an hour," is the reply of those members of the building industry who are using the HoltBid Method of Estimating Building Costs.

The HoltBid Method of Estimating Building Costs enables anyone at all familiar with this work to find the cost of a house or any similar building in from 30 to 50 minutes. This, as all members of the building industry know, is revolutionary. Before this simple method was devised, finding the cost of a house was a long, tedious job. A bill of materials had to be drawn off and then the price of each item figured. It was a job that everyone dreaded and one that, after it was finished, had to be checked and rechecked for costly errors. Many contractors and lumber dealers are still using the old method—they have not yet become acquainted with the HoltBid Method and have not put themselves in a position to compete with their more up-to-date competitors.

The HoltBid Method of Estimating Building Costs is easy to learn and simple to use. Thousands of contractors and lumber dealers are using it and are finding that it saves a great amount of work; gives them the advantage of their competitors who use the old, out-of-date method, because they can tell the client how much the building will cost a day or so sooner. They are certain that their figures are accurate as there is no chance for the mistakes that cost money, and sometimes lose the job.

William A. Radford, president of the HoltBid Service Co., has made it possible for thousands of members of the building industry to learn this modern method of finding the cost of a house during the last two years by sending it complete to anyone who will send one dollar as a guarantee of good faith. The complete set of HoltBid is delivered with all carrying charges paid, so that it may be examined and studied before there is any obligation. If the sender is not entirely satisfied he may have his dollar back if the HoltBid is returned within a certain time.

Many thousands of contractors, lumber dealers and others in the building business have taken advantage of this very liberal offer. It has given them an opportunity to see what HoltBid is like, and with few exceptions they have become enthusiastic HoltBidders. Here is what some of these HoltBidders have written after they have used this method.

"I had not put in over seven or eight hours learning to HoltBid before I figured a house and sold it and came out 2 per cent to the good."

"In my 50 years of building I have tried many methods of estimating but HoltBid is the most complete I have ever seen."

"Before I had half finished the HoltBid instructions, I sold a house and figured several other buildings. I find that by checking with houses we have already completed that the HoltBids checks up very closely."

Hundreds of other such letters have been received from HoltBidders. They all say that HoltBid is accurate; that it saves time and hard work; that HoltBid is easy to learn and simple to use after the principles of the method have been learned.

HoltBid was devised by practical men who were spending long hours figuring building costs by the old, hard method. It is the result of experience and ingenuity. **There is no bill of materials to figure until after the job is secured.** Then a delivery list is made from the HoltBid estimate.

HoltBid not only enables a contractor or lumber dealer to figure the material bill, but the labor bill as well. This is a great help, especially to contractors who are figuring with prospective home builders.

In this issue of AMERICAN BUILDER will be found an announcement of the HoltBid Method of Estimating. Read this announcement carefully and learn how easy it is to secure HoltBid. You are allowed thirty days to examine HoltBid and see how easy it is to learn. If after thirty days you are not perfectly satisfied, you may return the HoltBid and receive back the one dollar that is asked as a guarantee of good faith.

A letter addressed to the HoltBid Service Co., 1827 Prairie Avenue, Chicago, Ill., with $1 enclosed will bring HoltBid to anyone in the building business. The privilege of examining HoltBid for 30 days is extended before there is any obligation. Send for HoltBid today and see how easy it is to become a HoltBidder, which saves time and money.

For Quicker Sales

Group of Duplex Apartments, Tarrytown, N. Y. Insulated with Double-ply Waterproof Quilt. King-Walsh & Co., Architects and Builders, New York City.

Insulated houses sell more easily today. The public knows that home insulation increases comfort both winter and summer and saves coal bills.

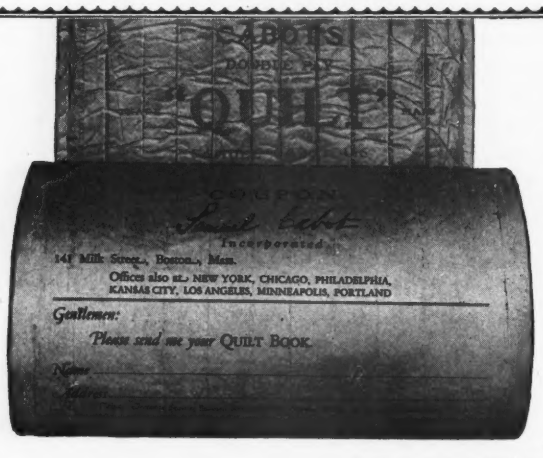
Some insulating materials increase costs and reduce profits. Government and other tests (copies on application) show that Cabot's Quilt *saves* building expense and gives most insulation at lowest cost.

Fill out the coupon below (Roll of Quilt) cut it out and mail it for free Quilt Book.

Insulate Those New Houses With

Cabot's Quilt

IN SUCCESSFUL USE OVER 30 YEARS



Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Bridgeport Brass Company, Bridgeport, Conn., offers its 1927 catalog No. 28 covering its line of Bridgeport-Keoting flush valves.

"Brixment for Perfect Mortar" is the title of a new booklet from the Louisville Cement Company, Inc., Louisville, Ky.

"Mechanical Pictorial Drawing," by W. W. Sturtevant, published by The Bruce Publishing Company, 354-364 Milwaukee, Wis., is text book designed to train anyone in this work. Price, $1.36.

Joseph T. Ryerson & Son, Inc., Chicago, has published a new catalog, in hard covers, containing complete information on its line of metal working small tools and machinery.

The Genfire Steel Company, Youngstown, Ohio, offers a booklet under the title, "7 Genfire Products for the Home."

The Milwaukee Corrugating Company, Milwaukee, Wis., has published a booklet on the subject of its Milcor reinforcing rib lath, ¾ inch Stay-Rib No. 3.

"Celotex Technical Notes No. 3-b," issued by The Celotex Company, Research and Development Department, Chicago, contains technical information on the various uses of this product, illustrated by detail drawings.

The U. S. Department of Commerce, Washington, D. C., has published "Simplified Practice Recommendation No. 52, Staple Vitreous China Plumbing Fixtures." Price five cents.

The Fitzgibbon Boiler Company, 570 Seventh Ave., New York City, offers a booklet cataloging and describing its heating boilers of various sizes and capacities.

The Southern Pine Association, New Orleans, La., has published a complete list of its subscribers in booklet form showing the location of plants, capacity, railroad service, output and items, and equipment and specialties.

The Cork Import Corporation, 345-49 W. 40th St., New York City, offers a series of bulletins, Nos. 270, 274 and 276 covering the subject of its Corkanstele construction.

The American Engineering Standards Committee, 29 W. 39th St., New York City, has published its 1927 Year Book describing standardization progress in a dozen major industries.

"Georgia Marble" is the handsome new catalog of the Georgia Marble Company, Tate, Ga., which contains 68 pages of useful architectural data, pencil delineations and details and color plates reproducing its line of marbles. It will be sent on request to any architect who desires to receive a copy.

The Defiance Sales Corporation, 26 E. 42nd St., New York City, offers a pamphlet describing its ideal foot rest for draftsmen's tools.

Chas. Cory & Son, Inc., 185 Varick St., New York City, offers a bulletin No. 21-29, containing data, illustrations and descriptions of its seamless, flexible, metal hose.

The Garrison Fire Detecting System, Inc., 79 Madison Ave., New York City, has just published a new booklet on the subject of "Automatic Fire Protection for Every Purse and Purpose."

The National Radiator Company, Johnstown, Pa., has issued the following booklets: "Beauty and Warmth," "Aero Exteriors" and "Aero Interiors" and also a catalog No. 36 of its Aero radiators.

The American Cork & Insulation Company, 24th Street and Allegheny River, Pittsburgh, Pa., has just issued, under the title "The Necessity of Moisture Resistance in Roof Insulation," the third of a series of folders on the various features of its corkboard for roof insulation.

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FREE BLUE PRINTS

AND FREE BOOK "HOW TO READ BLUE PRINTS"

Show You The Way To

9 BIG PAY JOBS

1. Building Superintendent—$5,000 to $12,000.
2. Building Inspector—$4,800 to $8,000.
3. Appraiser—$6,000 to $10,000.
4. Material Buyer—$5,000 to $7,500.
5. Material Salesman—$5,000 to $12,000.
6. Building Estimator—$6,000 to $10,000.
7. Real Estate Expert—$5,500 to $12,000.
8. Construction Foreman $4,500 to $8,500.
9. CONTRACTOR AND BUILDER IN A BUSINESS OF YOUR OWN—$5,000 to $12,000.

FIND OUT HOW

Easy it is to Make $4,500 to $12,000 a Year

Learn to read Blue Prints this amazing new way. See how quickly and easily you can train to make $4,500 to $12,000 a year! My FREE Blue Prints and big FREE Book "How to Read Blue Prints" disclose all the so-called "mysteries" of Blue Print Reading—also gives some startling facts about the nine best jobs in America—jobs open only to men who can read Blue Prints. Don't send one penny—just mail the coupon!

NO longer need you spend years trying to pick up the "mysteries" of Blue Print Plan Reading—for now a quick, sure practical method has been perfected that has made thousands of men Blue Print Experts in a surprisingly short time.

THE SECRET OF BIG MONEY

This is no ordinary "school course." It is practical from start to finish. It is based on many sets of real Blue Prints—plans that would cost thousands of dollars if purchased from the architects. Twenty famous experts in all lines of construction work talk over these Blue Prints with you in plain, simple language. Show you every detail. Explain every short cut. Tell you the "secrets" of quick, accurate estimating. Explain superintending. Give you for the first time many inside facts and money-making methods used by the "giants" of the Building Industry."

IF YOU LIVE NEARBY

Visit our big day or evening school attended by over 1,000 Builders. You can get the same training at home by mail—same plans, lessons and instructions. Your spare time is enough.

NO EDUCATION NEEDED

This is the kind of training that quickly puts men into $4,500 to $12,000 a year jobs—or into profitable contracting businesses of their own. Yet now you get it right at home in only 2 or 3 months. It requires no extensive education. If you can read and understand what is written here you can easily master it.

See what this training has done for others: Bartholomew, Calif., became a contractor at an increase of over 300% his first year; Blair, Okla., stepped up to Superintendent at 100% increase; Dickerson, R. I., increased his salary 700% in 12 months; Marchand, La., says: "My income has increased 200% and I now have more contracting work than I can do."

AMAZING OPPORTUNITIES

Over seven billion dollars will be spent this year in new construction! No wonder, then, such tremendous opportunities are open to you when you have this "head-work" training in Blue Prints.

If you want more money—real big money—then choose a "Blue Print" job in Building. Here is the one field where there are unlimited opportunities for advancement.

MAIL COUPON TODAY

So accept my FREE gift of a complete set of real working Blue Prints and my fascinating Book "How to Read Blue Prints" that tells all the interesting and instructive facts about Blue Print Plans. Don't send one penny—pay no C. O. D.—it's all FREE. Just fill out and mail the coupon today—NOW!

TWO BOOKS also FREE

Chicago Technical School for Builders,
Dept. P-120, Chicago Tech. Building,
118 East 26th Street,
Chicago, Ill.

Please send me your free book "How to Read Blue Prints," and complete set of real Blue Prints. I understand these are mine to keep without obligation. It is also understood that no salesman will call on me.

Name.....

Address.....

City.....State.....

Chicago Technical SCHOOL for BUILDERS

Dept. P-120, 118 East 26th Street, Chicago, Ill.

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

David Lupton's Sons Company, 2203-O E. Allegheny Ave., Philadelphia, Pa., has published two new booklets under the titles, "Lupton Casements of Steel" and "Better Windows for Your Home." The first, listed as Catalog C-217, contains useful information and a number of sketches and details, while the second illustrates, in two colors, home installations.

The Interlocking Tile Co., Inc., 100 Chaffee Ave., Syracuse, N. Y., offers several very well illustrated pamphlets covering the subject of its system of tile construction.

"The Story of Wood" is the title of the booklet published by the National Lumber Manufacturers' Association, P. O. Box 811, Washington, D. C., for distribution in connection with its $15,000 lumber slogan contest.

"Construction and Construction Materials" is the title of a pamphlet issued by the U. S. Department of Commerce which is a reprint from the Commerce Yearbook 1926, for the Division of Building and Housing, a summary of the leading developments during the year 1926.

"Brass Tacks" is the name of a new house organ published by the Bridgeport Brass Company, Bridgeport, Conn., for the purpose of making available in print, to industry as a whole, the special knowledge and experience of its organization.

The Georgia Marble Company, Tate, Ga., is distributing Detail Sheets Nos. C-105 and C-106, for filing in its detail folder, showing typical, suggested, exterior details of economical design.

"Door-Ways" is the regular monthly publication of the Richards-Wilcox Mfg. Co., Aurora, Ill. The October issue has been made a special Fire Prevention Week issue, containing appropriate material.

The Warren-Knight Company, 136 N. 12th St., Philadelphia, Pa., has recently issued a pamphlet on its Sterling level which received the gold medal award at the Sesqui-Centennial Exposition last year.

Wright Rubber Products Co., Racine, Wis., offers color folders illustrating the rubber tile flooring and paving blocks which it manufactures.

The National Mortar & Supply Co., Federal Reserve Bldg., Pittsburgh, Pa., issues a folder on the sound-proofing qualities of its Banner lime.

"Heating Homes With Oil" is the title of a booklet published by the Sundstrand Engineering Company, Rockford, Ill., and described as a data book for architects. It contains information along the line suggested by the title and also a specification.

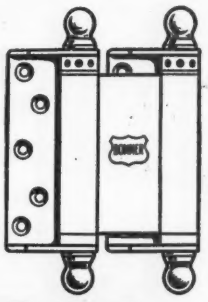
"Zoning Progress in the United States" is a recent report prepared by John M. Gries, chief of the Division of Building and Housing of the U. S. Department of Commerce, Washington, D. C.

The Commercial Shearing & Stamping Company, Youngstown, Ohio, offers a pamphlet covering its line of pallets for the concrete industry.

The Peerless Ice Machine Company, Chicago, has issued a folder on the Peerless system, central plant, refrigeration for apartment buildings.

The "Novo Pumping Handbook" published by the Novo Engine Company, 202 Porter St., Lansing, Mich., is a companion booklet of the Novo Hoisting Handbook and contains valuable information on pumps and pumping work, including illustrations, diagrams, tables and rules.

They are the best



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of People are Pushing

Bommer Spring Hinges

when opening doors

Follow the line of least resistance
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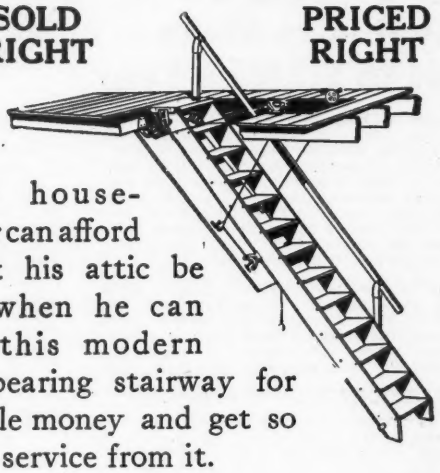

No house-owner can afford to let his attic be idle when he can buy this modern disappearing stairway for so little money and get so much service from it.

Write for our proposition.

THE DISAPPEARING STAIRWAY CO.
AKRON, OHIO.

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A.B.-11-27

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Associated General Contractors of America, 1150 Munsey Building, Washington, D. C., has published a "Manual of Accident Prevention in Construction." Price $1.00.

Electrol Inc. of Missouri, 170 Dorcas St., St. Louis, Mo., has published a filing booklet describing its burner, illustrating installations and providing blue prints and specifications.

The Arkansas Soft Pine Bureau, Boyle Building, Little Rock, Ark., has published a most handsome booklet under the title "Houses of Wood for Lovers of Homes," containing a group of original house plans submitted in the annual Architectural Competition of 1927, sponsored by the Bureau. It may be obtained by writing either to the Bureau or to any of the following firms who are members of the Bureau: Arkansas Lumber Co., Warren, Ark.; Caddo River Lumber Co., Rosboro, Ark.; Crossett Lumber Co., Crossett, Ark.; Dierks Lumber & Coal Co., Dierks, Ark.; Edgar Lumber Co., Wesson, Ark.; Fordyce Lumber Co., Fordyce, Ark.; Halpin-Neimeyer Lumber Co., Hot Springs, Ark.; Southern Lumber Co., Warren, Ark.; Wisconsin & Arkansas Lumber Co., Malvern, Ark.

"Y P S Oval" house organ of The Youngstown Pressed Steel Company, Warren, Ohio, contains many interesting and informative items on subjects relating to metal lath and other steel products.

"The DuPont Magazine," monthly publication of E. I. DuPont de Nemours & Company, Inc., Wilmington, Del., contains excellent articles relating to the many important products made by this organization. The last issue has been made an anniversary number marking the 125th anniversary of the founding of the company, and containing much interesting information on its history and development.

✣

Treated Block Floors in Demand

THE use of treated wood block floors in the United States in 1926 showed an increase of 17 per cent over the previous year, according to figures prepared by the U. S. Forest Service in co-operation with the American Wood Preservers' Association. A total of 10,822,518 square feet of these blocks was laid, the preservatives being creosote oil and creosote coal-tar paving oil.

The reason given for this increased demand is the desire for permanence, resilience and high wearing qualities. In addition, wood blocks are a favored floor material in factories, mills, machine shops, foundries and warehouses, because they are least tiresome to the feet of employees obliged to stand on them many hours each day.

✣

To Standardize Plumbing Fixtures

DIFFICULTIES experienced by the consumer in matching faucets, bath tub fittings and other plumbing devices, and in purchasing repair parts for them, may soon be solved, according to an announcement of the American Engineering Standards Committee. The work of developing standards and specifications, proposed by the American Society of Mechanical Engineers, will include materials, performance and efficiency of devices, roughing-in dimensions and other important technical items having direct bearing upon the service and economy afforded the consumer

FIAT SHOWER BATH COMPARTMENTS

A Type for Every Home ~ New or Old

No matter how expensive or inexpensive the Bathroom may be, Fiat Showers make the ideal installations. Their knocked-down construction permits of ease in handling and quickness and simplicity in assembling.

Eliminates lead pans, special drains and grouting. Require a minimum amount of space, thereby effecting large savings in building construction costs.

No sharp corners or crevices in the Fiat Shower Bath Compartments in which dirt may collect. The complete compartments are positively LEAK PROOF

The installation of one FIAT SHOWER in homes and apartments now having only one bath will more than double the bathing facilities.

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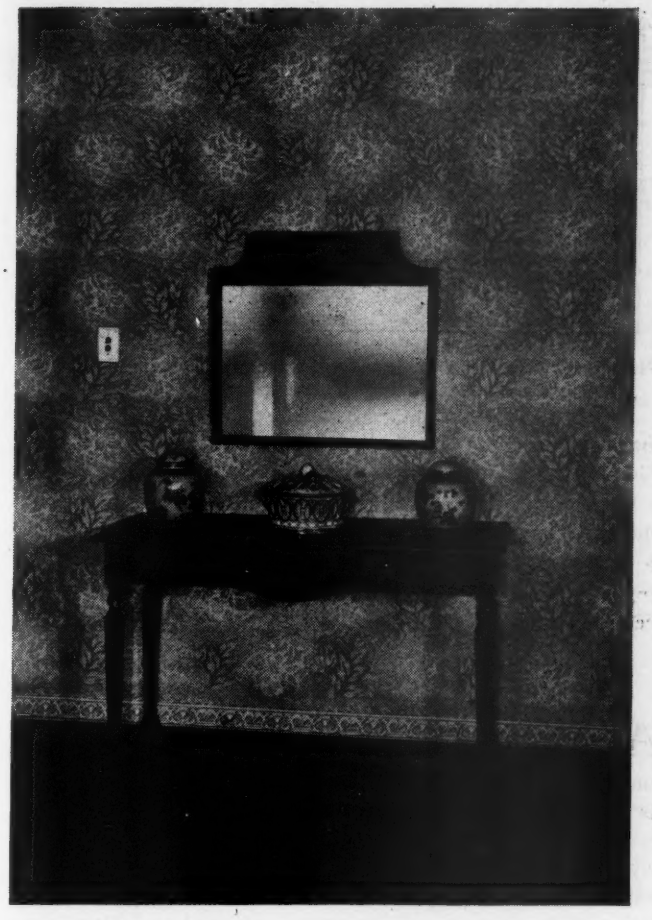

Wall-Tex has strength to make its beauty lasting

THE Columbus-Union Oilcloth Company can point with pride to its many handsome patterns for 1928. The hallway illustrated above, by a prominent interior decorator, is made permanently beautiful with Wall-Tex No. 3063. Its rich beauty will endure for years. It conceals a remarkably strong, flexible fabric.

Wall-Tex fabric wall-covering helps to prevent cracks in walls and ceilings by strengthening the plaster, or hides cracks should they occur. In houses where the plaster is old, Wall-Tex conceals the imperfections. Nothing equals it for ceilings.

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Architects, builders, decorators should write for full information on their particular requirements. The Columbus-Union Oilcloth Company, Columbus, Ohio.

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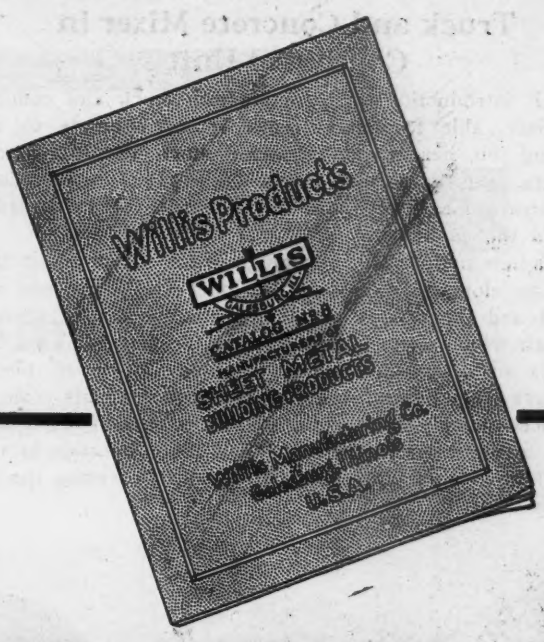
PERMANENT WALL-COVERING

With the name that's easy to say and hard to forget



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Truck and Concrete Mixer in Combined Unit

THE introduction of a combination truck and concrete mixer, able to deliver ready mixed concrete to any building job, has already attracted much attention among builders, engineers and architects on the Pacific Coast and arrangements are now being made for its distribution in the eastern states.

This new mixer takes advantage of the rotating principle. It is an elongated, revolving cylinder shell with one end closed and the other containing a funnel shaped opening through which aggregates enter and discharge. The interior is so arranged, with a patented, set-up of blades, breakers and baffles, that a homogenious mix can be produced quickly at the job. Water is carried in separate tanks on the sides of the mixer and the connection is such that it can be quickly released to the interior when the wet mix is desired.

This Combined Truck and Mixer Will Deliver a Perfect Mix Right on the Job Without Delay and at Low Cost.

All controls, both water and mixer, are operated from the driver's seat. By means of the control levers, the driver can start the operation of the cylinder either while standing or while the truck is in motion. The body of the mixer rests in a cradle suspended from the supplemental frame of the mixer and rotates in either direction for loading and dumping.

According to the manufacturers this mixer serves with equal efficiency for the smallest as well as the largest jobs. Every bit of sand, aggregate, cement and water is accurately measured before it goes into the body of the mixer. While the aggregates are being poured at the bunker the shell is rotating, thoroughly mixing the dry batch, which is then ready to receive water when the job is reached.

✣

For Cutting Corner Bead

BUILDERS and contractors should be pleased to hear of a new machine developed for the purpose of cutting accurate, tight-fitting corners on bull nose expansion corner bead. This machine is small and compact, simple and easy to operate. The base is 6 by 3 inches and it is 5½ inches high. It is operated by a hand lever 12 inches long. The total weight is only 15 pounds and it may be bolted to a bench or fastened in a vise.

In use, the expanded metal wings on the bead are clipped for a few inches parallel and close to the head. The bull nose is inserted with the bead down into a slot in the machine and the lever is pulled, making a perfect cut. This also is a time-saver as well as improving the work.

This Simple Little Machine Was Specially Designed to Cut Accurate, Close Fitting Corners on Corner Bead.

With the increasing vogue of plaster reveal windows and open archways and for the metal trim, expansion corner bead is becoming very popular and the development of this machine to insure true, tight-fitting corner joints meets a real demand.

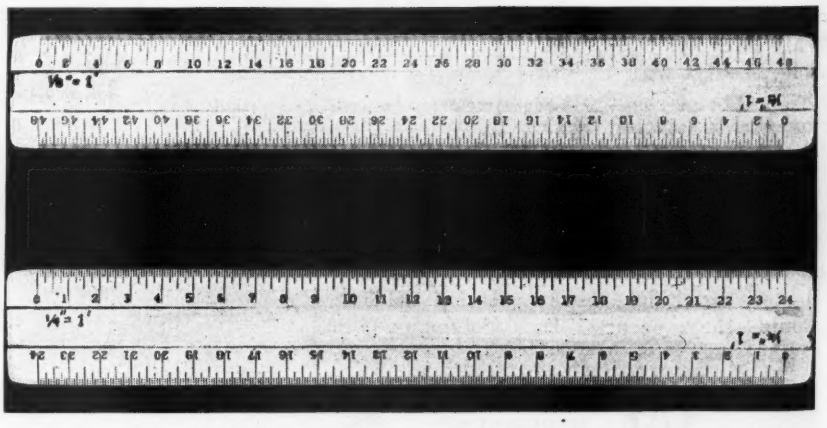
✣

A Useful Scale

ALTHOUGH professional construction surveying has hardly begun its infancy in this country, yet it has already brought about the development of a new scale as a result of the efficient methods used by the surveyor in the measurement of drawings. This new scale greatly increases the speed and accuracy of the architect's drawing, the surveyor's measurement and the builder's interpretation of the drawings in the process of erecting a structure, because it is a positive scale and, therefore, there is no loss of time or accuracy due to approximating.

This new scale consists of four beveled edges with two scales on each side, starting from left to right on opposite edges, making the scale readable without turning it end for end. The two scales on one side are divided as ¼ inch representing 1 foot and each foot subdivided into 12 equal parts to represent inches. Numerals are shown at each foot representation. The two scales on the reverse side are divided as ⅛ inch representing 1 foot with 1-inch subdivisions. The numerals on this side are shown at each 2-foot representation.

These scales are accurately engine divided upon white celluloid mounted on good quality seasoned wood stock and manufactured similar to the highest grade scales now on the market. They may be had in any reasonable length, although it has been found, from practical experience, that 6, 12 and 18-inch lengths are most convenient to use.



Here Is a Convenient Scale Which Increases Speed and Accuracy of the Work of Architect, Contractor and Building Surveyor.

Let the Frantz Line Help You Solve 1928 Garage Door Problems

The Frantz Line of Guaranteed Builders' Hardware is constantly being enlarged and improved to keep in step with building progress and to give the Contractor and Builder every possible co-operation—guaranteed quality, more efficient equipment at no additional cost.

For 1928, in the garage door equipment field, Frantz offers an improved No. 76 Hinge, a new Cane Bolt. (No. 680) and two new Latches (No. 195 and No. 198). Each of these items is made with the same careful workmanship and of the same quality materials as is characteristic of all Frantz Guaranteed Builders' Hardware.

Our Engineering Department is at your command to give you suggestions or assistance in selecting the kind of hardware that will fit your individual problems best. Their study of the building trade, whether it be homes, garages or barns, fits them to offer you valuable advice.

FRANTZ MFG. CO., Dept. A-12, Sterling, Illinois

"No Hardware is Genuine FRANTZ—

FRANTZ TRADE MARK Red Label GUARANTEED BUILDERS' HARDWARE

—QUALITY Without the Red Label"

Strike for No. 500 Door Holder

No. 625 Chain Bolt
Made of cold rolled steel. Has galvanized bolt and spring. 6" or 9" sizes.

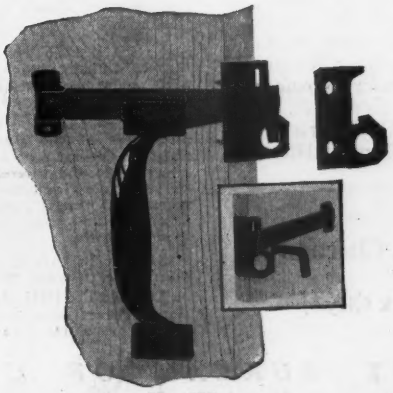
No. 630 Chain Pull
Acts as handle and release for Chain Bolt—saves time. An exclusive Frantz feature. All steel. (Patented.)

No. 650 Foot Bolt
Patented device holds bolt at any depth. Hollow bolt. 6" or 9" sizes. Case of cold rolled steel.

No. 500 Door Holder
Made entirely of steel. Positive acting—easily released. Has strong chain. Strike made on swivel, so that holder folds out of way. (Patented.)

New No. 76 Garage Hinge
Has new button-tip pin. Pin is loose for reversing. Made in 8", 10", 12" and 14" sizes. All steel.

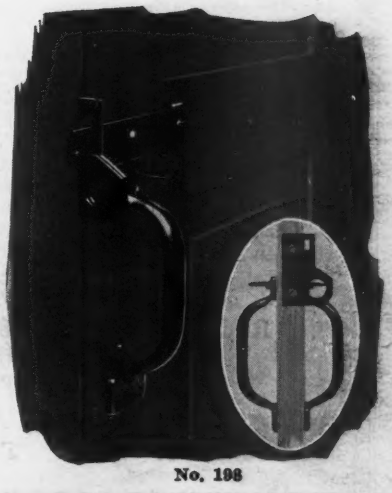
New No. 680 Cane Bolt
All steel. Easily installed. Bottom bearing attached to door with carriage bolts. Japanned.



No. 195

New No. 195 Latch
Strong, perfect acting, for long service. Adjustable for ¾" to 2¼" doors. All steel. Japanned. (Patented.) Positive latching feature.

New No. 198 Latch
Two graceful handles. All steel. Japanned. Has Frantz positive latching feature. Patents pending.



No. 198